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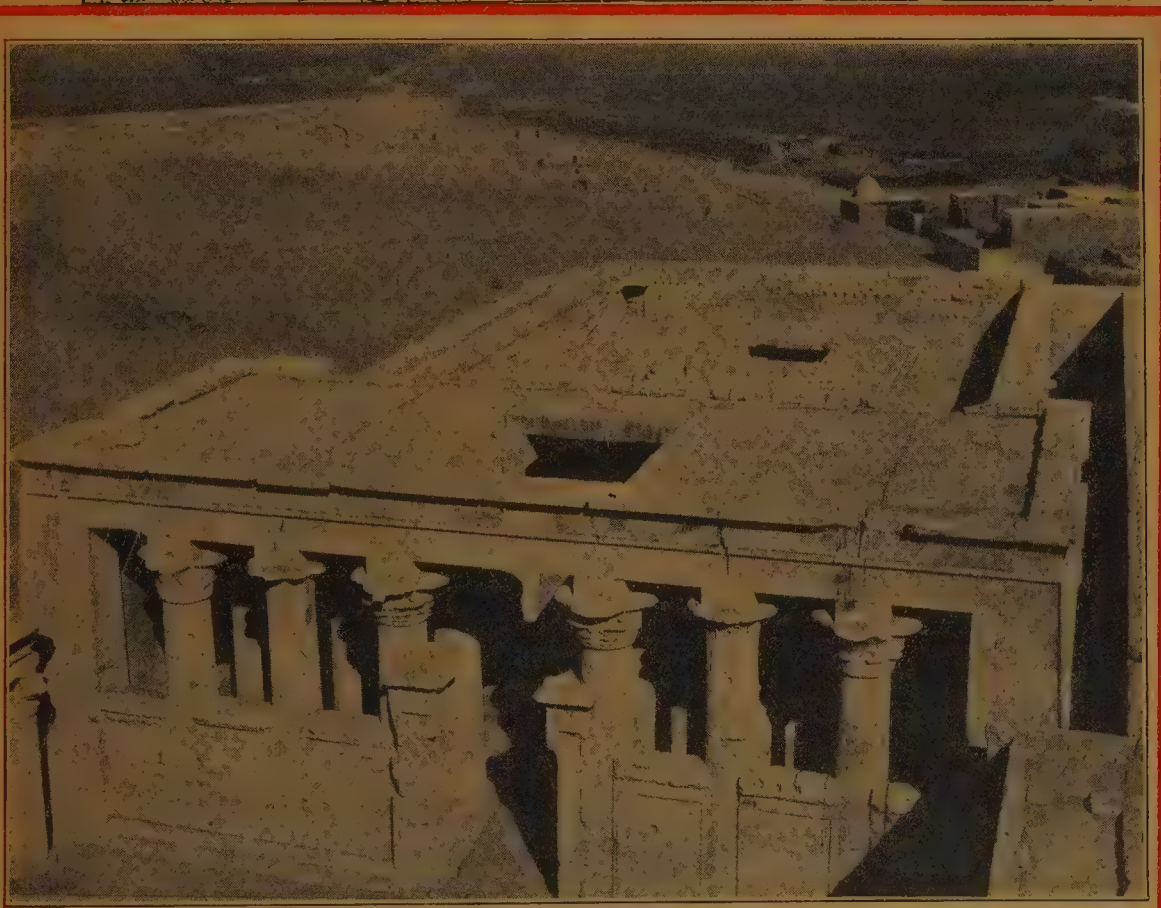

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JANUARY-FEBRUARY, 1908

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WORKMEN REMOVING ANCIENT PAVEMENT AT NIPPUR

The Pavement being removed was laid, or relaid, by Narâm-Sin, with bricks bearing his father, Sargon's, name, *c.* 2800 B. C. (?) Just above, 4 to 6 ft. thick, is pavement made by Ur-Engur, *c.* 2450 B. C. Above is pavement of Ur-Ninib, *c.* 2325 B. C. On top is the pavement of Kadashman-Turgu, XIII century B. C.

Photograph by Haynes. Courtesy of Dr. Albert T. Clay.

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RECORDS OF THE PAST

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JANUARY-FEBRUARY, 1908

OBJECTS AND METHODS OF ARCHAEOLOGICAL EXCAVATORS

FOR years past the race of the nations for the exploration of classical antiquity has been marked by such enthusiasm that science is yearly indebted to it for highly important and significant results. Indeed, scarcely a week goes by without a report of some new discovery being made in the course of excavations within the sphere of the early Roman Empire. Despite the fact that these investigations are being carried on with the greatest zeal on the part of America, and the excavations made by Americans during the last years have been a really striking success, the views of many people on the value and necessity of such work are still very vague, and questions as to the what, how, where, and why, of such excavations are continually being put to our antiquarians.

I shall now attempt to give an answer to these questions, as far as space and opportunity will permit.

Besides the written works of the ancients which have come down to us a number of actual objects dating from those remote times have also come into our hands, which supply us with much valuable information and supplement and explain the old writers, and in union with them unroll before our eyes a uniformly clear picture of antiquity, or, in so far as it is a question of works of art, they are to this day of the greatest value as unequalled models to our artists and artistic workmen. To increase the number of such antique objects, or where towns and buildings are concerned, to recover at least their founda-

tions, is naturally of great importance, as such new discovery opens up to us some new side of the life of antiquity, teaches us to understand our existent material better, and enables us with the aid of the inscriptions which are seldom wanting, to fill up many a gap in ancient history.

In comparison with what once existed, it is, of course, but extremely little that has been preserved through all the centuries, for the bad times of war, of general confusion, and decline in all spheres of learning, separate us from that great epoch of culture, and a great number of factors are ceaselessly endeavoring to destroy all that has been created by the hand of man.

What have been preserved down to our days are mainly works of architecture, which are lasting and strong enough to defy the tooth of time, and were protected by the people, as far as they were in constant use. Only in isolated instances have these buildings served the original purpose, down through the centuries, for which they were erected, as for example, that old lighthouse, gray with years, on the northwest coast of Portugal, which, erected in the time of the Roman Emperors, to this day, in darkness and in foggy weather, with friendly rays, points out the way to the passing ships. With the changes of time most buildings have also changed their purpose and have thereby at the same time, unfortunately, lost some of their originality. Temples were often converted into Christian churches and rebuilt according to the needs of the new cult. In later years some were even realtered in order to serve as mosques. In the Middle Ages the buildings of Rome were more or less transformed into fortresses, as the former tomb of the Emperor Hadrian, which is still a fortification. The great temple of Edfou was used as dwelling-houses, and up to a short time ago, a whole village was housed within its walls.

Of movable objects, too, indeed, even of works of art, a few were used again and again for some purpose or other, and so escaped destruction. Even in our day sarcophagi are used as baptismal fonts, as reservoirs, or even drinking troughs for cattle. A celebrated marble vase, the work of a considerable artist, served successively as an anchorage post for ships, and as a font. To-day it stands in the museum at Naples. The funeral urn of the elder Agrippina became in the XIII century the corn measure of the city of Rome.

The number of such articles which the people took under their protection and handed down through centuries, is, of course, not so great, and most of the antique things now preserved in our museums had in some way or other become buried under the earth, where they remained for a longer or shorter period in safe hiding, while centuries and peoples rush over them unheeded. But how do such objects get into the ground? the antiquarian is continually being asked, especially when it is a question of statues of considerable dimensions and the like.

It is a well-known fact that in inhabited places the level of the ground is continually rising. Every day new building materials are

being brought into the towns, but the rubbish that is taken out is not so considerable, consequently each new building stands somewhat higher than the one which preceded it. By each new paving the streets are raised a little and open squares and gardens grow still faster by reason of the falling leaves, sweepings, etc. In ancient towns, which had a great number of unpaved streets and squares, and where at times whole districts were destroyed by fire or sword and lay unbuilt for centuries, this so-called culture-stratum is, of course, much more considerable. [See Frontispiece.]

In this stratum or layer are found many things that were either thrown away and lost, or otherwise accidentally mislaid, and so

TEMPLE OF EDFOU, EGYPT, IN WHICH A WHOLE VILLAGE OF NATIVES LIVED BEFORE IT WAS CLEARED OUT

Photo by F. B. Wright

eventually got under the surface. Still richer in "finds" are the spots on which settlements once stood, which were suddenly destroyed and leveled to the ground by fire, sword, or earthquakes. The most valuable objects were, of course, not left behind, but nevertheless much remained lying under rubbish and ashes. By the action of the weather a layer of fertile soil was formed and a blooming vegetation soon grew over all, and nothing remained to show that the spot now visited occasionally by shepherds was once a flourishing village, until, perhaps centuries later, the favorable situation of the place induced other peo-

ples to settle down there, where, possibly, after a period of prosperity they suffered the same fate as their predecessors. Thus, for instance, in the course of Schliemann's excavations in Troy, quite a number of towns belonging to the most widely different periods and peoples, were found lying one upon another and still distinctly recognizable by what was left of them.

On the occasion of floods, too, many things have been carried under the earth, for when rivers destroy, they spread at the same time a covering of gravel and sand over the ruins, which is in some places of considerable thickness, as in Olympia and in the plain of the Eurotas. It is also sufficiently well known that at times whole towns have been destroyed or buried by volcanic forces, as at Pompeii and the numerous villages adjoining.

For perilous times, moreover, money and other valuables were often hidden away under the ground by anxious persons and many a one went down to the grave bearing his secret with him. Such treasure trove is by no means rare; at Hissalik, Vettersfelde, and Petrossa, in Roumania, for example, were found great treasures in gold, and at Boscoreale was dug up the famous silver "find," which is now the most prized possession of the Louvre Museum at Paris. Bronze treasure, too, which perhaps is to be regarded as the stock of some manufacturer, is awaiting its resurrection. Near Bologna, for instance, there were found 14,000 bronze utensils, for the most part enclosed in a single huge vessel. Even statues were buried, perhaps by the worshippers of the old religion, trusting in the return of the dominion of their gods.

But the richest and most numerous hiding places for smaller objects were the abodes of the dead, in consequence of the belief that human beings retained their daily needs even after death. Vessels are found in almost every grave. These consist chiefly of weapons and jewelry. Unfortunately, it was not always articles of full value which were given to the dead. Many things were especially made for this purpose, *e. g.,* shields of lead and wood, gold work of gilded clay, vessels without spouts, and such as were much too small, or otherwise of no practical use, worn-out household utensils, an earring, the mate to which had been lost; metal looking-glasses bent out of all shape, which distorted the face—the main thing was to satisfy appearances. But, for all that, the different contents of the graves are of no mean significance for the science of antiquity on account of their infinite variety and the number of the gifts.

In all ages it has come to pass that objects, which had lain safely buried for a longer or shorter period, have been discovered and brought to light by some happy accident. A thunderstorm rends the earth, a gale scatters a layer of sand, or some river sweeps away what is buried in the sand, and dumps it down somewhere on the bank, as was the case some years ago on the Alphcios, with a helmet which Hieron had dedicated after a victory at sea. The fact that peasants

are particularly lucky at finding treasures has already been mentioned by several writers of antiquity, and just the peasant working in the field has the best chance of doing so; a furrow is turned up a little deeper, a long waste piece of ground is made arable, or a mound opened up.

Near Portici, a well was being dug and the deposit of ashes covering Herculaneum was thereby disturbed, the catacombs were discovered by puzzolan-diggers, the celebrated find of silver at Hildesheim was brought to light quite by chance, during some operations at the shooting-stand there, and some time ago the ruins of the Græco-Roman town of Emporeon were laid bare by some workmen in the province of Gerona in Spain. In the course of more extensive operations, such as the construction of the Anatolian railway, for instance, chance finds are naturally very numerous.

In the beginning nobody but treasure-hunters ever thought of digging in the ground with a set purpose. This branch of industry flourished as far back as the time of the ancients, and to this day plays an important part in the Levant. Unfortunately, however, science but very rarely reaps any advantage from what is gained by the treasure-digger, working with his many superstitious arts. Should he find gold and silver, it usually finds its way into the melting pot, as do also very frequently the accidentally discovered hoards or treasures, if only from a fear that some superior, should it be only the cailif of the village, get wind of it and demand his share. Should, on the other hand, the dreamed of riches transform themselves into coal and ashes, that is to say, should the find consist only of a cinerary urn and a few vases, objects which they are at a loss what to do with, a kick from a heavy boot soon puts an end to their beauty. The number of statues and inscriptions, too, that have been destroyed by the treasure-hunters and ignorant peasants is not small. In the opinion of the Oriental the treasures are enclosed in the huge inscribed blocks, whose hieroglyphics he himself cannot decipher, and which are so carefully handled, cleaned, washed, studied, and photographed by us. The inscription is the "open sesame," and whoever is able to read it, can take possession of the treasure. But if the treasure is inside, the Oriental reasons, that then it must be got out in another way, and so he smashes the stone.

The tombs were, of course, the favorite hunting grounds, and even in the days of antiquity—as follows from Egyptian criminal documents and Greek romances—grave robbery was so very common we might almost say it was a regularly organized profession. Hence, it is that we very frequently find the ancient tombs already broken open, robbed of their most valuable contents, and the remainder in pieces. But these sherds do not always prove that the tomb has been broken into, for the clay vessels were frequently smashed at the burial to prevent the return of the deceased, or from another prevailing belief. For instance, the vessels were put into the tomb with the dead

man for his use in the other world, but the deceased did not exist any more only his soul, if we may call it so, and the soul, of course, cannot use the material parts of the earthly vessels, but only the spirit which still lingers there. The soul of the vessel, therefore, must be set free, the vessel must die—it is broken to pieces.

As for the excavations proper, that is, those which are carried out not for the sake of possession, but in order to ascertain and learn how things were in former times, they were begun at a much earlier period than is generally supposed. Even the Babylonian kings dug for the foundations and building plans of the ruined shrines of the olden time with the object of applying the old rules and regulations to their new structures. In the first few centuries of our era excavations were made in Palestine to discover the place of the crucifixion, the scenes of martyrdom, and the graves of prominent men. In Italy, at the beginning of the XII century, people began to take an interest in everything dating from the time of the old Romans, whom they regarded as their forefathers, and made researches in the ground for relics of the olden time. But these excavations and those of the same kind which were undertaken here and there during the Middle Ages were pure raids, the main purpose being to obtain as great a number as possible of movable objects. They did not trouble themselves in the least about the circumstances under which the objects were found, and nobody thought of turning them to scientific account. Hence it is, also, that we do not even know where many celebrated works of art were discovered, to say nothing of the accompanying circumstances. The statues, being only in very rare cases in perfect preservation, were furnished with arms and legs, and when necessary even with heads, and then served to adorn the gardens and villas of the aristocracy. By this process of completion, more or less clumsily executed, in which, as a rule, filing and polishing of the antique parts were included, much has been spoiled and many a work rendered valueless. It is scarcely necessary to mention that occasionally also little mistakes occurred, and the repairers whose workshops were crammed with antique arms, legs, hands, feet, and heads would sometimes place a masculine head on the statue of a woman, and vice verse, or transform a fighting warrior into a fallen one.

Predatory raids in which, in most cases, a great deal was destroyed, are now forbidden by law in nearly all countries concerned, but, nevertheless, they frequently occur in lonely and remote parts, as is proved again and again by the many antique objects cropping up in the art trade.

Archæological excavations, properly so called, are now carried on along definite, methodical lines. We seek not merely for separate objects, but consider the topography, plan, and history of the place in question at all the different periods of its growth and development. It is often not enough for us to excavate a single temple or theater, we lay bare entire towns with their streets, squares, and gymnasia,

their baths, libraries, and theaters, their temples, market-places, and factories, their shops, stores, and workshops, and it is no longer Pompeii alone that unfolds before our eyes a picture of the town life of antiquity.

All that we learn from a single one of these excavated towns cannot be told in a few words. Firstly, from the whole plan and style of building we can tell approximately when the town was founded, or whether there had always been upon the site in question a settlement dating from pre-historic times. From the further extension of the settlement we can see that it began to flourish after a certain time, and the course of this growth is, as a rule, not hidden from us. We are hereby able, with the help of the ancient writers, to bring the town into historical and educational connection with other towns and states. Their political significance is deducted from inscriptions; and from the number and splendor of the public buildings, temples, theaters, baths, etc., the prosperity of the community. The quality of the buildings, statues, and other works teaches us in what relations the inhabitants stood to art, whether they followed their own direction in art, had at their disposal their own creative and executive artists, or whether they imported their art. If so, from where, and, furthermore, whether they had enough artistic sense to develop and improve this imported art, or if it starved or ran wild under their hands. We learn something, too, concerning the life of the inhabitants, both in their business intercourse and private life. The sale-rooms, market-places, and shops appear equally distinct. Here dwelt a baker, there a draper, and at this corner there stood an inn. We go into the business rooms and see the arrangements and measures which were necessary to every trade, in some even we find the very tools. In the same manner we learn to know the private houses in their ground plan and structure, with their courts and pillared halls, their state-rooms and gardens, their living rooms and kitchens. Not one side of this antique life is overlooked during such excavations; everywhere we find scattered signs from which we are able to make deductions in this direction or in that.

Such comprehensive excavations, which occupy several years, are, of course, only in very rare cases, undertaken by a private man at his own expense. Scientific research societies, the more important museums, or the state itself here step in, and with sufficient funds carry out the operations on a grand scale, under the guidance of archæologists, assisted by epigraphists, architects, geometricians, etc.

Before beginning such excavations it is necessary above all to find out the right place in which to set the spade, and for this a little luck is needed; however, one will scarcely begin an excavation entirely at hap-hazard without any signs or traces whatsoever to indicate the presence of antique relics. It is chiefly the ancient writers who show us the way, and in union with them the relics which exist to this day. Of ruined towns, great shrines, castles, and fortresses something—

were it only a miserable bit of wall—has been preserved in many cases throughout the centuries, and has still remained visible. Thus at all periods the royal castles of Tiryns and Mycenæ, and the sites of Olympia and Delphi, of Ephesus and Miletus have been known and recognized. But it is more difficult when we have to rely only upon the accounts of traditions, in which, in some cases, the situation of a shrine, or a temple, is accurately described, but often is only casually mentioned or vaguely designated. In such circumstances we must work upon other criteria, and every detail is given significance. The character of the landscape, the nearness of water or mountain peak, the capabilities of defense of the place, etc., are to be carefully noted, the present name of the village, the names of the brooks and rivers, and above all, any antique objects which may have been discovered by the inhabitants—sherds, terra cottas, vases, inscriptions, stones from buildings, etc.

All these appear to indicate that we have before us the site of an ancient settlement, which we make certain by an experimental research, a few trenches are drawn across the ground in question, and then we have a fair idea whether or not a systematic excavation would result in the hoped-for success.

When we now, after the more theoretical explanations, enter upon the actual work of the excavators themselves, we find that the preparations and practical work demand a much greater outlay of time and trouble than may appear at the first glance. Privations of all kinds await the excavator, though, indeed, there are not wanting incidents of the merriest and most amusing kind to keep up his spirits in lonely times.

Having chosen an excavating field, the next thing to be done is to obtain the consent of the government authorities in whose district the excavator intends to dig, and tedious diplomatic negotiations are sometimes necessary before everything is settled, and the digger's share of the finds definitely fixed. According to the laws of some countries, the finder has only the right of scientific exploitation, *i. e.,* the right to photograph, and, perhaps, take casts of the objects discovered, and to publish the results. In other countries we are treated more favorably and receive, for instance, one-third, or if we are the owners of the ground even two-thirds of the whole find.

The lands where one can work the whole year through are rare. It is partly the climate, and in no small measure the malarial fever from which our scholars in southern countries have to suffer so much, which calls a preëmptory halt; partly, also, the local circumstances which necessitate the breaking off of the operations for some length of time, if only on account of the laborers, who are needed for the harvest and field work.

When the time comes for beginning the excavating campaign, you take leave of civilization for a length of time, and repair to the scene of future discoveries. Some foremen have been engaged and

ARAB WOMAN GRINDING CORN IN NATIVE CAMP AT NIPPUR, DURING THE EXCAVATIONS
Courtesy of Dr. Albert T. Clay

sent out in advance with the baggage. These overseers are mostly picked and experienced fellows, who, in many cases, have already taken part for years in excavations in the service of different nations. They acquire in the course of time a certain experience in archæological matters, understand perfectly how to manage the workmen and know the habits and needs of the archæologists, so that they are everywhere indispensable.

Having reached the scene of operations, the first thing to be done is to find lodgings. There is very seldom a hotel in the neighborhood, or any place where tolerable quarters can be arranged. Should the researches be of presumably short duration, one simply puts up with what offers. Last summer, I, myself, lived for weeks in a hay-loft, slept on a wooden chest, and felt very well all the time. It is, of course, more comfortable to live in tents, especially when a number of scientists have to be accommodated. The chief tent, which is used both as office and dining-room, stands in the center, to the right and left of it are the sleeping tents, the tents for measuring instruments, photographic cameras, and valuable working tools and utensils. The less costly instruments, such as baskets, rollers, levers, and the like, lie outside, one of the foremen being responsible not only for their loss, but also for keeping them in order. Behind the main part of the camp lie the kitchen quarters. There is the kitchen itself, a magnificent structure, built of rough stones collected somewhere in the neighborhood, kept together with clay. The roof is made of rushes or straw, or

whatever happens to be at hand, and if any one chance to have a spoilt photographic plate, it is put in for a window. A similar den is erected for the servants. Should the roof be a tarred one and generosity have been shown in the matter of old photographic plates, such a hut will be the pride and boast of its inmate. "Have you ever slept in a castle?" was, for instance, the question put by the little serving-man to the cook, when they moved into their quarters on the occasion of some excavations by the Oriental Society in Egypt.

Near the kitchen are usually the zoological gardens of the expedition, which are divided into a domestic and scientific section. The domestic section contains the horses and donkeys, when they are needed, and poultry, ducks, geese, etc., in large numbers—before feast days, even a sheep. In the other more interesting division are to be found the various characteristic animals of the country, jackals, wildcats, owls, and other creatures, many of which cut short their unwilling visit by finding out some means of leaving their improvised cages, which are frequently much too frail.

When the scene of excavations is remote from civilization, say in the far East, a guard room must be added, as constant post for the military escort.

But as the climate of the country does not permit of living in tents for the entire duration of the excavations, it is advisable from the very commencement to erect one's own excavation-house, more especially if there is a prospect of their occupying it a number of years. This building may be made so solid and firm that after completion of the excavations it can be kept up at a trifling expense and serve as quarters for visitors to the ruins.

At daybreak the work begins. The people, most of whom have already come a long way, are called over and place themselves with their hoes and baskets in rows of 10 or 15 by the side of the caller. When the column is complete, they march with their overseer at the head to the scene of operations, and the work is soon in full swing. When lorries are employed the boys are very busy filling the cars with baskets, which are handed to them by the man with the hoe. If there are no lorries the basket-carriers may be seen marching in long rows, carrying away the rubbish. One, sometimes two, men are constantly occupied in repairing the broken baskets, while boys have the task of supplying the men with drinking water. On hot days this is hard work; they are wanted everywhere, called everywhere, and have to drag about incredible quantities of the noble beverage in the course of the day. Of course, if the well or spring is some distance off, the carrying is done by a horse, the so-called "water-horse," or a donkey, and the "water-boys" have only to distribute the drink.

The men work very industriously as a rule, the overseers take care of that, now and then shouting a vigorous "forwards!" and when the whistle sounds for leaving off work, woe to the boy who dared to throw away his basket at the first sound of the whistle. The basket is

NATIVES AT KARNAK, EGYPT, CARRYING AND DUMPING DIRT FROM THE EXCAVATIONS Photo by F. B. Wright

first tidily emptied, then all are placed together and counted. Lazy and disobedient workers are punished by deductions from their wages, while good work is acknowledged by gratuities. Now and then it happens that some one asks leave for 10 or 20 days. Either he wants to get provisions, for which he has to travel from 3 to 5 days, the same length of time being needed for bargaining, or he wants to get married, or to build himself a house. There are also some people who desire to rest on their laurels and fairly earned fortune, and who think when they have worked faithfully for a few months and earned a good sum they must retire on their riches, and with $20 or $30 in one's pocket one can live like a lord for some time in the Orient.

For the archæologist there is, as a rule, no want of variety in the work; now there is this and now there is that demanding the personal presence of the leader. Here comes an overseer rushing up, "Come, sir, and look at the boy he is bleeding." Some slight injury has occurred, which generally passes over without any series consequences, but occasionally also it may cause some little annoyance. Thus, for instance, one day immediately after dinner time, the head overseer came to me in the "working room," as my dwelling was officially called: "Come quickly, sir, they have all stopped work!" And truly the workmen were crowding by, making for their tents, and on the field of labor I found only a few left, who were able to explain the why and where-

fore to me. The story went that a stone had struck one of them on the head with such force that he collapsed and lost much blood, and this being a bad omen, the work was immediately stopped. I began to fear that the men would not return to the work at all and we should be obliged to secure others in the more distant villages. But the patient recovered quickly and the next morning at roll-call not a man was missing except the patient himself, who sent a "cousin" as his substitute.

It is more pleasant when it is reported that a tomb, for example, has been struck. The case has to be carefully handled. The workmen receive a special gratuity for the find, but are then disbanded, and the select or elite troops are called in. These being a better paid group of old, trained, and trustworthy persons, are employed for especially difficult work and posts of trust. By these men the tomb is now laid bare and cleaned out. If the work cannot be accomplished in one day, a little tent is put up over night, in which two or three men have to keep watch. As an extra spur to their vigilance, an old blunderbuss is given over to them. It is, of course, unloaded, but they are extremely proud of it.

There is everywhere and always something to be done; besides, reports of the finds have to be written, wage-lists, account-books, etc., kept. Only Sunday, in Mohammedan districts Friday, brings some rest and leaves time for excursions, for shooting, or visits to the dignitaries of the surrounding villages. On high holidays the whole village comes to pay a return visit. Coffee and cigarettes are handed around, and the whole company, the chieftain of the village, the magistrate, the night watchman, etc., squat on the ground and declare solemnly that all the people in the village are good, that thieves are to be found only in the neighboring village, and that they are especially attached to the Americans, etc.

The field of excavations displays quite a different picture when the end of the campaign approaches. Everywhere there is thumping and hammering going on, big chests are being made for the finds, the tents are taken down, and the buildings bolted and barred; tools are packed up or stowed away in the buildings, the draught-oxen are being brought up to carry away the big chests on drags or carts, camels and donkeys are being loaded, everywhere the liveliest activity prevails. After a little all have withdrawn, the workmen have gone back to their villages, the archæologists to civilized life, calm, and forsaken lies the field, recently so full of life, only high up in the air big brown eagles are gyrating in wide circles, ready to pounce upon the creatures which are slinking about the exhumed ruins and striving to settle there.

AUG. KOESTER.

Königliches Museum, Berlin, Germany.

1 2 1

1. TRIBUTE MONEY. 2. HEAD OF GODDESS ARETHUSA, OF ANCIENT SYRACUSE

RELIGIOUS CHARACTER OF ANCIENT COINS

THE order of the President to omit the familiar inscription, "In God we trust," from the new $10 gold pieces, has awakened all manner of criticism, and the tremendous outcry of individuals and the condemnatory resolutions of churches and conferences. It recalls a similar hostile attitude developed in England some years ago. Many Christian and religious types had been introduced on the coins of Europe since the days of Constantine the Great, and Richard II placed the inscription: "Dei Gratia" on the English coinage, but when it was omitted from the silver florin of 1848-9, and a new type substituted, there was a storm of opposition that resounded throughout all England—and doubtless the transgressor often regretted his act of indiscretion. President Roosevelt has never been charged with irreligious motives in ordering the religious inscription omitted from the new coin, and yet many of his greatest admirers have regretted what they regard as a hasty and ill-advised action, and feel that for the sake of the universal religious sentiment of the people, it would have been policy, at least, not to have removed the ancient landmark. Although the "Dei Gratia" was not restored, it is not unlikely that "In God we trust" will find a place again on the $10 gold piece long before the die is worn out. As far as I am personally concerned I have no choice, for the truth expressed in that inscription is just as real to me, whether stamped upon our coins or not, but so far as the people are concerned, I hope that they will not be denied any of the blessings that such a national religious faith expressed on our coins may bring to them and to their children, and I am sure that our foremost American, and most conscientious President, would deprive no one of such a heritage.

In view of the wide discussion and the general interest shown, it may be profitable and interesting to the readers of the RECORDS OF THE PAST to give a brief survey of certain features of the religious char-

COIN WITH MARS VICTOR

acter of the coins of the ancient Greeks and Romans, from the early history of coinage in the VII century B. C., through a period of 1,000 years.

The science of numismatics abundantly shows that man is a religious being, for the coins of Greece and Rome prove that their religion was as inseparable from their money as from their daily life, for all their best works in art and literature were consecrated to the gods whom they revered.

Hence the presence of a religious inscription on a coin is no modern innovation, and without historical precedents, but from an early date, through centuries, the Greeks stamped the familiar representations of their deities upon their coinage. Nor was it strange that a religious people should have associated their religion with their money, for their purpose was to keep before the people the actual gods whom they held to be the founders and patrons of their cities and the inspirers of their best works.

It is generally believed that the earliest coins were struck within the sacred precints of the temple, and this view is in harmony with the early representative character of money, and also the fact that in early and insecure times the temples were the safe and inviolate places for the rich treasures stored therein. When the transition came to convert the bars and wedges of electrum, gold and silver into coins, how natural that the mint should have been established in the same place, under the direction of the priests and representatives of the state and the supervision of the gods, whose images the coins bore, as a guarantee for their genuine character. In fact, the very word money is derived from the temple of Juno Moneta, in Rome, for within its precincts the public mint was established, and it is but natural to suppose that the Romans adopted this idea also from the Greeks.

Just as the history of the Greeks and Romans is inseparably connected with their religion, in like manner was their money identified with their religion, bearing the images and superscriptions of their gods and goddesses. The effigies or symbols of these were stamped

COIN WITH PORTRAIT OF ALEXANDER THE GREAT

upon the gold, silver, and bronze coins, so that their vast pantheon is represented in a variety of religious types on the money that circulated for domestic and national use, containing the familiar images of Zeus, Saturn, Neptune, Mars, Mercury, Apollo, Hercules, Vulcan, Juno, Venus, Diana, Cybele, Athene, Arethusa, Astarte, Persephone, Apis, Anubis, etc.

These images of their deities served as guardians of the genuine character of this all-important medium of exchange, and appeared as a guarantee that the money was of the required weight and purity, for the monetary heresy of recent times had not led their people to believe, even during a political campaign, that 50 cents worth of silver was equal to 100 of gold.

The coins were generally stamped with the image of the local guardian deity, or else with the recognized symbol of that deity, just as the coins of Athens bore the effigy of Pallas and the owl, the symbol of that goddess. Thus, on a coin of Claudius and Agrippina, we have preserved one of the very best extant copies of the famous and much venerated image of "Diana of the Ephesians," whose zealous followers opposed the work of the Apostle Paul in their city. As that same image appears on a coin of Philip, the Arab, we may conclude that the worship of the many-breasted Asiatic nature goddess prevailed in Ephesus at least two centuries later.

So scrupulously guarded was the religious character of the coinage of the Greeks in placing the images of their deities upon their money that it was not until after the death of Alexander the Great that the effigy of a human being received this distinction. Nor did Alexander himself, with all his overreaching worldwide ambition, presume to usurp the place reserved for the gods by placing his own image there, for though he was a supplanter of kings and the rulers of earth, he did not attempt to supplant deities. He did dare to discard from the face of his coins the well-known effigies of the hereditary gods Æres and Apollo, and substituted those of Pallas, Herakles, and the Zeus of Olympia, but he refrained from introducing his own. It was not until after he had completed his brilliant earthly career and passed from the eyes of men that his apotheosis took place, and when

dazzled by his seeming superhuman achievements the people assigned him a place among the gods, it was only a logical sequence that Lysimachus and Ptolemy gave him the supreme and divine distinction by placing his somewhat idealized portrait upon their coins, although Pallas was retained on the reverse of the former and Zeus was enthroned on the reverse of the latter, so that the gods still retained their ancient seats upon the money.

Whilst the apotheosis, or elevation of Alexander the Great to a place, hitherto reserved for deities, was an innovation in history, yet the process was a gradual one achieved through years of brilliant conquests that seemed to justify his bold claim to be the son of Zeus Ammon, and this made his ascendency to a place among the gods quite natural, hence the people found no fault when they saw his portrait on the *tetradrachma* substituted for the long familiar Libyan god.

From this period begins a long and interesting portrait gallery of many of the rulers of the Greek world, whose images occupy the obverse of the coins, whilst the reverse is generally reserved for the effigies or symbols of the deities.

The same custom was followed by the Romans, who stamped their coins with the portraits of rulers and distinguished women of the court, but on the reverse they often gave place to the effigies and names of their gods and goddesses. So general was this custom of stamping the Greek and Roman money with religious types that the half-shekle became a necessity for the maintenance of the temple at Jerusalem, and no wonder that the priests refused the current money for the sacred tribute of the sanctuary, and obliged the people to have it exchanged for half-shekle, which was free from all pagan devices. In commercial value it was identical with the two drachma, or the two denarii that were current in Palestine, but to have put money containing the images and symbols of pagan gods into the treasury of their holy temple, erected to the worship of one god, would have been sacrilege to the faithful Jews.

It was a grievous calamity that befell the Jews when their city and temple were destroyed in the year 70, but a gross insult was added to that injury when the Emperor Vespasion and his successors for many years imposed upon them a special tribute for rebuilding and maintaining the temple of Jupiter Capitolinus in Rome. The emperor ordered the Jews, in whatever country they might be, to pay for this purpose the sum of two drachma, or two denarii, the equivalent of the half-shekle that they had hitherto paid to the support of their holy temple in Jerusalem. To the pious Jew this was enforced idolatry, and many were the efforts at times to escape it.

We can easily understand what a shocking outrage this must have been to the religious sensibilities of the grieviously oppressed Jews, who, suffering from the loss of their temple and worship, were now forced to do what seemed like the very climax of sacrilege, to contribute to the support of a temple and its worship, the very name

of which was an abhorrence to the Hebrews. That temple of Jupiter, on the Capitoline Hill, seems to rise again from the wrecks of the distant centuries, and gives us vivid and realistic impressions of the political and religious state of the Jew in his relation to the Gentile world, as we study one of the coins of Vespasion, Titus, or Domitian, that bears an excellent representation of this most venerated building in Rome for the Romans, but the most profane to the faithful Hebrew. But how different this coin appeared to the religious consciousness of the oppressed Jew as he looked upon it; for it was inseparable from the saddest associations and many suffered shameful humiliations from the severe and revolting measures enforced by Domitian. On the accession of the humane Nerva, however, the most disgraceful usages and malicious preversions of justice in gaining the necessary information for imposing the tax were abolished. The Roman Senate struck a special coin on which they commemorated this noble act, thus making it a most interesting historical monument. Nothing makes those distant times so real and brings them so near as when I study attentively these cotemporaneous coins, for they are also cotemporaneous and unrevised monuments.

I have another most interesting coin that shows the humiliating and oppressed condition of the Jews after their disastrous efforts to throw off the Roman yoke under the leadership of Bar Cochebas. That unsuccessful endeavor, from 132-135 A. D., involved his own race in the greatest misfortunes. The Jewish power was crushed. They were forbidden to enter the city of Jerusalem on pain of death, and in shameful contempt for them a figure of a swine was placed over the Bethlehem gate. We can easily realize this fact when we examine a coin struck by the Tenth Legion Fratensis at Jerusalem, where Titus originally stationed them to guard the place after the destruction of the city, for on that coin we have a confirmation, in the figure of the swine and the letters, "L. X. F." stamped upon it. Imagine the feelings of a Jew paid in such money! There were other types no less offensive to him, but often there was no alternative, for money was a necessity.

The early Christians were embarrassed with the same religious character of the money, for they were obliged to use for the most sacred purposes of their holy religion the gold, silver, and bronze coins of imperial Rome and Greece that bore the images and types of a pagan mythology which they repudiated. They cherished a different faith, as the Apostle Paul wrote to the Christians in the Church at Corinth: "There is no God but one. For though there be that are called gods, whether in heaven or on earth; as there are gods many, and lords many, yet to us there is one God, the Father, of whom are all things, and one unto Him, and one Lord, Jesus Christ, through whom are all things, one through Him." It must have been a great joy to the Christian Church, when, after the accession of Constantine the Great, they saw the labarum and symbols of Christ appear on the

imperial coinage, but their hearts must have sunk again, when later, his nephew, Julian the Philosopher, in his zeal to restore paganism, supplanted the Christian symbols with pagan devices, and placed on the money the figure of Apis, banishing every suggestion of the cross and of that religion so dear to the struggling church. And how suddenly that sorrow was turned into joy, for with the death of Julian, Jovianus ascended the throne and the image of Apis disappeared, and the symbols of Christ appeared again on the coinage of Rome. I do not mean to convey the impression that in the instances named the cross appeared on all, but rather on a few types, and yet that was an imperial acknowledgment of Christ.

There is an exceedingly interesting coin, especially to the student of the New Testament. It is the coin of the proconsul Proclus, struck on the island of Cyprus, during the reign of Claudius. On this coin we have a remarkable and important confirmation of the accuracy of the writer of the Acts of the Apostles. For more than a century many of the leading critics of France and Germany denied the historical character of St. Luke's statement in Acts xiii: 12, wherein he calls Sergius Paulus, the ruler at Paphos, a deputy or proconsul. The ground of the objection was that a proconsul was appointed by the Senate, and only to provinces where no military force was required, and as they contended that a military camp existed on the island at that time, the ruler could not have been proconsul, but a proprætor, or procurator appointed by the emperor. The long and bitter controversy that impeached the accuracy of the sacred narrative was suddenly brought to a close by the discovery of 3 coins struck on the island, during the reign of Claudius, bearing his portrait on the obverse, and on the reverse the name of the local deputy, Cominus Proclus, with the title of proconsul ἀνθύπατος,—the identical Greek word employed by St. Luke, and as St. Paul visited Cyprus during the reign of Claudius, it was settled by the coin that Sergius Paulus was a proconsul, and Cyprus was at that time a senatorial and not an imperial province.

The coinage of the subsequent Christian centuries bears many examples of sacred symbols and effigies, and the history of early Christian numismatics shows considerable variation of religious sentiment as expressed on the current coins. At times there is merely a symbolic representation of the cross, or initial letters, and then again an image of the Saviour. Justinian II, who was guilty of many crimes, has, perhaps, his strongest, but not enviable claim of being a Christian, in a cotemporary numismatic monument, for on a gold solidus he put the bust of the Saviour, and on the reverse, a full length portrait of himself, grasping the cross as the symbol of his faith.

Then succeeded the iconoclastic dynasty, when the effigies of Christ were excluded from the coins. In time the sacred effigies appeared again, and Leo the Philosopher and Leo of Basil was the author of a marked innovation, for he placed the bust of the Virgin

1. COIN OF ATHENS. 2. QUEEN PHILIOTIS, WIFE OF HIERO II, OF ANCIENT SYRACUSE—FIRST PORTRAIT OF A WOMAN TO APPEAR ON A COIN, C. 250 B. C. 3. DIANA OF THE EPHESIANS

Mary with the legend, Mary—*MPΘY*=Mary, Mother of God, showing a new movement in theological thought, which reached its climax in this legend placed upon the coins of Romanus Diogenes, 1065: "O, glorious Virgin, he that trusteth in thee prospers in all things." This petition appears on the besants of Alexius: "Help us, O Lord!"

To trace this subject further would be to exceed the limits fixed for this paper, and I shall close as I began. Whether the inscription: "In God we trust" be retained is immaterial, for I am confident that the religious faith and character of the people will be in no wise affected, for the belief expressed in that legend was ineffacably inscribed upon the human heart long before the Asiatic invention of coins by the Libyans. Though all religious inscriptions should be omitted from the coinage of the world, the people would still continue religious, for man is essentially a religious being, and the science of religions shows that no race of men has ever been discovered without religion.

I recall an interview with the great French archæologist, Maspero, and a statement made to the writer in the Cairo Museum, when he spoke of the almost universal religious character of the monuments and inscriptions discovered in the valley and boundaries of the Nile, for he declared that the number and proportion were so great that one might almost conclude that ancient Egypt had been mainly peopled by the gods, and had only animals and men enough for sacrifices, and to attend to worship.

To ask, why is man a religious being, we might as well ask why does man think, why does he love? Man is a thinker and there is something for him to think about. Man loves for there is much to love, and the God who made him is love. In like manner the universal nature of mankind responds to the Infinite Spirit and Absolute Being, the Creator of man, and in whom we live and move and have our being.

The importance of retaining the inscription on the $10 gold piece, or not, will depend largely upon the point of view of the individual, but no sane man will refuse to accept our gold eagles should that legend be omitted. The President acted from conscientious motives, and whether or not he erred in judgment, no one need imagine a national calamity so long as we have men like himself at the head of the nation, who love righteousness and fear God. It is all important that the faith expressed in that inscription should ever be retained in the hearts of all the people.

JEREMIAH ZIMMERMAN.

Syracuse, N. Y.

COIN WITH HEAD OF ZEUS

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THE INFLUENCE OF THE GLACIAL EPOCH UPON THE EARLY HISTORY OF MANKIND*

WHEN, in 1859, Doctor Falconer, Professor Prestwich, Sir John Evans, and Sir Charles Lyell, with some other English geologists, returned from a visit to Amiens and Abbeville, in the valley of the Somme in northern France, and reported their acquiescence in the genuineness of the discoveries by Boucher-de-Perthes, of rough stone implements in connection with the bones of *Elephas Primigenius,* and other extinct animals, in the "high-level" gravels of the Somme, a great sensation was produced in the scientific world. For, as was fully shown by Sir Charles Lyell, in his work upon the *Antiquity of Man,* published in 1863, these dis-

*Paper read before the Victoria Institute, London.

coveries, and other similar ones, made in different parts of France, and in southern England, involved the existence of man during the continuance of the Glacial Epoch. Innumerable subsequent discoveries, both in Europe and America, have confirmed this conclusion, and the existence of glacial man has been very generally accepted.

One of the chief reasons for the general public's hesitation to accept the evidence for glacial man arose from the then prevalent opinion that the glacial epoch closed about 100,000 years ago, and, therefore, that the acceptance of glacial man involved an enormous antiquity for the human race. At that time Lyell's uniformitarian theory concerning geological movement was scarcely questioned by any, and it was deemed legitimate for geologists to make unlimited demands upon the Bank of Time. An interesting illustration of this is found in the calculation made by Charles Darwin in the first edition of his *Origin of Species,** where he estimated that a limited amount of erosion of the geological deposits in southern England must have occupied 306,662,400 years, which, he says, is a "mere trifle" of geologic time. Indeed, the uniformitarians generally regarded such a period as 500,000,000 years as a convenient thing to conjure with, while Sir Andrew Ramsay and others** maintained that for all we could tell geologic time was absolutely limitless.

But since the publication of the first edition of *The Origin of Species,* and of Lyell's *Antiquity of Man,* there has been a startling revolution in the opinion of scientific men concerning the age of the world and the length of geologic periods. In the later editions of *The Origin of Species,* the calculation above referred to has been omitted and a paragraph inserted in its place, making some very pertinent remarks about the inadequate conception which most men have of the significance of even one million years, and of the changes which would take place during that period, even at a very slow rate. Sir Archibald Geikie emphasizes the point by calling attention to the fact that if a river lowers its bed by erosion 1 ft. in 1,000 years (which certainly is a very slow rate), it would produce a gorge 1,000 feet in depth in one million years. Such rivers as the Colorado, in America, are entirely competent to have eroded a cañon 6,000 feet in depth in one million years. Indeed, on every hand evidence is multiplying of the great activity of the forces which produce changes in the earth's surface and in the species of animals and plants which live upon it.

It was Prof. George H. Darwin, who first demonstrated to the satisfaction of his fellow mathematicians that the moon was thrown off from the world not more than one hundred million years ago, and, therefore, that the geological ages whose history is studied in the stratified rocks of the earth, must be compressed within that period. Later, Lord Kelvin has voiced the pretty general belief of his asso-

*See pp. 250-252.

**See Lord Kelvin's Annual Address at the Victoria Institute, 1897.

ciates in maintaining that twenty-four million years is all the time which geologists can have at their disposal. With him, Alfred Russell Wallace is in substantial agreement, maintaining from the rate of probable deposition of geological strata that thirty millions years is really all the time that geologists require.

The approximate correctness of these recent calculations cannot well be doubted, since they rest upon very substantial data, from which speculative considerations are largely eliminated. Professor Darwin's calculations are based upon the known influence of the tides in retarding the revolution of the moon upon its axis, while Lord Kelvin's confident assertion rests upon the known laws governing the radiation of heat from the solar system, and Wallace's conclusions are largely derived from the new light which recent studies have shed upon the rate of erosion, which is going on upon the surface of the earth at the present time. Extended and careful investigations show that the Mississippi is depositing sediment in the Gulf of Mexico at a rate which would require the removal of 1 ft. of soil from the entire area of the Mississippi basin, stretching from the Rocky to the Alleghany Mountains, in less than 5,000 years. This would lower the level of the whole American continent 200 ft. in 1,000,000 years. If this process continues without interruption not much will be left of North America after 3,000,000 or 4,000,000 years. Other river systems are much more active on account of the steeper gradient of their channels. The Po, for example, is lowering its basin at the rate of 1 ft. in 700 years.

It is true that geologists have not readily accepted these narrow limits imposed upon them by the astronomers and physicists, and they are attempting by various lines of argument to obtain an extension of credit to the extent of 100,000,000 years or so. But even with such an extension the case is very different from what it was when 306,000,000 years could be spoken of as a "mere trifle." In the readjustment of the ratios of geologic periods, under these new limits, the glacial epoch is brought down to comparatively recent time.

Dana's estimate of these ratios are twelve for the Palæozoic period, three for the Mesozoic, and one for the Cainozoic, which includes the whole of Tertiary and post-Tertiary time. If we accept Lord Kelvin's estimate of the whole time at the disposal of geologists, these ratios would give us 18,000,000 for Palæozoic time, 4,500,000 for Mesozoic, and 1,500,000 for Cainozoic time, while post-Tertiary time, which includes both the glacial and post-glacial epochs, is probably not more than one-thirtieth of the Cainozoic period, which would be 50,000 years. But even if this is doubled, and 100,000 years is allowed for it, the post-glacial period, which is certainly not more than one-tenth as long as the glacial, would be only 10,000 years.

We are, however, not dependent on speculative calculations alone to bring the close of the glacial epoch down to so recent a period that it is injected far into that of human history. Within the past twenty-

five years, innumerable data have accumulated in America to prove that the ice of the glacial epoch lingered over the northern part of the United States, as far south as the 43d degree of north latitude, as late as 7,000 years ago. This evidence is so clear and of such a varied character that it cannot be resisted when once it is clearly understood.

The evidence naturally falls under five divisions:

1st. The small recession of post-glacial waterfalls.

2d. The small enlargement of post-glacial river valleys.

3d. The limited extent to which post-glacial lakes, ponds, and kettle-holes have been filled with sediment.

4th. The small amount of the subaerial erosion of the surface of limestone rocks in post-glacial time; and

5th. The identity of the flora of glacial with that of the present time.

1st. In America, at least, nearly all the waterfalls are in the glaciated region, and have been produced by the damming up of pre-glacial water-courses with glacial debris, so that the drainage is diverted into new channels, where we can estimate the amount of erosion which has taken place since the withdrawal of the ice. The Falls of Niagara and those of St. Anthony, in the Mississippi River at Minneapolis, are among the most spectacular of the instances at our command, but they are by no means the only ones. The waterfalls in the United States, which have been produced by obstruction of the pre-glacial drainage by the irregular deposit of glacial debris, are numbered by the thousand, and everywhere illustrate the limited amount of work accomplished by streams since the glacial epoch. But in none can calculations be so easily made as in the cases of Niagara and the Falls of St. Anthony.

In pre-glacial times the drainage of the Lake Erie basin followed a channel leading to the head of Lake Ontario, forty or fifty miles west of the Niagara. This had been occupied for such an enormous period that the Lake Erie basin was drained to its bottom, and whatever cataract had formerly existed had entirely disappeared, and there was an uninterrupted channel from one basin to the other. During the glacial epoch this channel was filled with glacial debris, or boulder clay, so that it was completely obstructed and the water diverted to its present channel. But the drainage of this basin could not resume its eastward flow to the Atlantic Ocean until the glacial ice obstructing it had retreated from the Mohawk Valley in the central part of the State of New York.

The difference between the levels of Lake Erie and Lake Ontario is, in round numbers, 325 ft. (Lake Erie being 575 ft. above tide, and Lake Ontario 250 ft.), but the coll at Rome, N. Y., leading into the Mohawk Valley, is, in round numbers, only 100 ft. above Lake Ontario. Until, therefore, the ice had retreated from this coll

at Rome, N. Y., there could have been no eastward drainage from the Great Lakes, but as soon as it was removed the renewed eastward drainage could begin, and the Niagara River would commence the erosion of its gorge where it plunged over the escarpment at Queenstown. The time required for the erosion of this gorge between Queenstown and the present cataract represents the time which has elapsed since the ice of the glacial period retreated from the central part of New York, between the Adirondack and the Catskill Mountains; while, over the lower St. Lawrence Valley, and, indeed, over nearly all of Quebec and Ontario, it must have lingered to a much later date. The problem, therefore, is to find the age of the Niagara gorge. Until recently this was largely a matter of conjecture, but now our calculations may rest upon a solid basis of observed facts.

The length of the Niagara gorge is, in round numbers, 7 miles, or 35,000 ft. The strata of rock through which it is cut are of very uniform composition. At the surface we have a stratum of compact Niagara limestone, 25 or 30 ft. thick, at the mouth of the gorge, but between 70 and 80 ft. at the present cataract. Underneath the Niagara limestone very uniform strata of Niagara shale, about 80 ft. thick, extend through the whole distance. It is this relation of the soft beds of Niagara shale to the overlying stratum of compact limestone which occasions the cataract. The back lash of the plunging water erodes the underlying shale and leaves projecting masses of limestone, over which the water falls in perpendicular descent. From time to time these masses of projecting rock fall to the bottom, so that the edge of the cataract is made to retreat. But the volume of water is so tremendous and its fall so great that the largest masses of rock are moved by it, and, being rubbed together by the motion, are gradually reduced to powder, and carried away piecemeal, leaving the base of the fall unencumbered.

Underneath the Niagara shale there are four other persistent strata of alternate hard and soft character. The Clinton limestone is about 30 feet thick and very compact, but it rests upon about 70 ft. of shaley rock, which is easily disintegrated. This Clinton shale, in turn, rests upon a stratum of compact Medina sandstone, 20 to 30 ft. thick, and that upon a shaley rock reaching to the water's edge. All these strata dip slightly to the south toward the cataract. Owing to this dip and to the gradient of the stream, all but the two upper strata disappear below the level of the stream a little more than half way to the cataract, so that practically our problem involves the simple question of the erosion of the 35,000 feet of the two Niagara strata.

In 1841, Sir Charles Lyell visited Niagara, and from a hasty examination published a random guess that the rate of recession did not exceed 1 ft. a year, and probably was not greater than 1 ft. in 3 years; according to which the beginning of the erosion of the gorge must have been as far back as 35,000 years at least, and probably 100,000 years. Unfortunately, these figures have passed into the literature of

the subject, and, owing to Lyell's great authority, have been accepted as scientific facts. But Sir Charles was himself very far from regarding them so; for, at the time, he urged Prof. James Hall, of the New York State Geological Survey, who accompanied him, to make an accurate trigonometrical survey of the crest of the Falls, so that there should be a proper basis of comparison with future surveys, which would reveal the actual facts.

Such a survey was made in 1842. Permanent monuments were erected at the points at which the angles were taken, and all the details properly recorded in the third volume of the report of the Natural History Survey of the State of New York. After the lapse of sixty-three years, the last of four recent official surveys of the Falls was made in 1905, by Mr. W. Carvel Hall. Taking these surveys as the basis of his calculations, Dr. G. K. Gilbert, one of the most experienced members of the United States Geological Survey* has reached the conclusion that the actual annual rate of recession of the Horse Shoe Fall for the whole period, between 1842 and 1905, is 5.3 ft. The Horse Shoe Fall has receded since Sir Charles' visit 338 ft. There can be no question, therefore, that at the beginning of the Christian era the edge of the cataract was 1¾ miles lower down than now, and that at the time of the Trojan War it was at the head of the whirlpool rapids, nearly three miles below, and that at that more distant period of human history, marked by recent discoveries in Egypt and Babylonia, this marvelous cataract was just beginning its work of erosion, while Canada was still as well within the grasp of the glacial epoch as Greenland is to-day.

Prof. N. H. Winchell's investigations into the age of the Falls of St. Anthony at Minneapolis lead to almost identical results, results which are confirmed by the general appearance of almost all the waterfalls of the glacial region of North America.

2d. There are innumerable river valleys, large and small, within the glaciated region whose limited depth and width bear indubitable testimony to the shortness of time during which the streams have been active in erosion. Through some public works in Oberlin, Ohio, I have had unusual opportunities the last few years to make definite observations upon the extent of the erosion of a small post-glacial stream and upon the rate of its activity.

As soon as the glacial ice had retreated north of the watershed separating the Mississippi Valley from the Great Lakes, and up to the time when the ice had melted off from the Mohawk Valley, permitting the Falls of Niagara to begin their work, a temporary body of water occupied the Lake Erie basin with its outlet into the Mississippi Valley. The shore lines of this temporary lake are easily followed for hundreds of miles.

Plum Creek, from which this new evidence comes, is in the village of Oberlin, Lorain County, Ohio, 12 miles back from the present

*See *Bulletin of the U. S. Geological Survey*, No. 306, 1907.

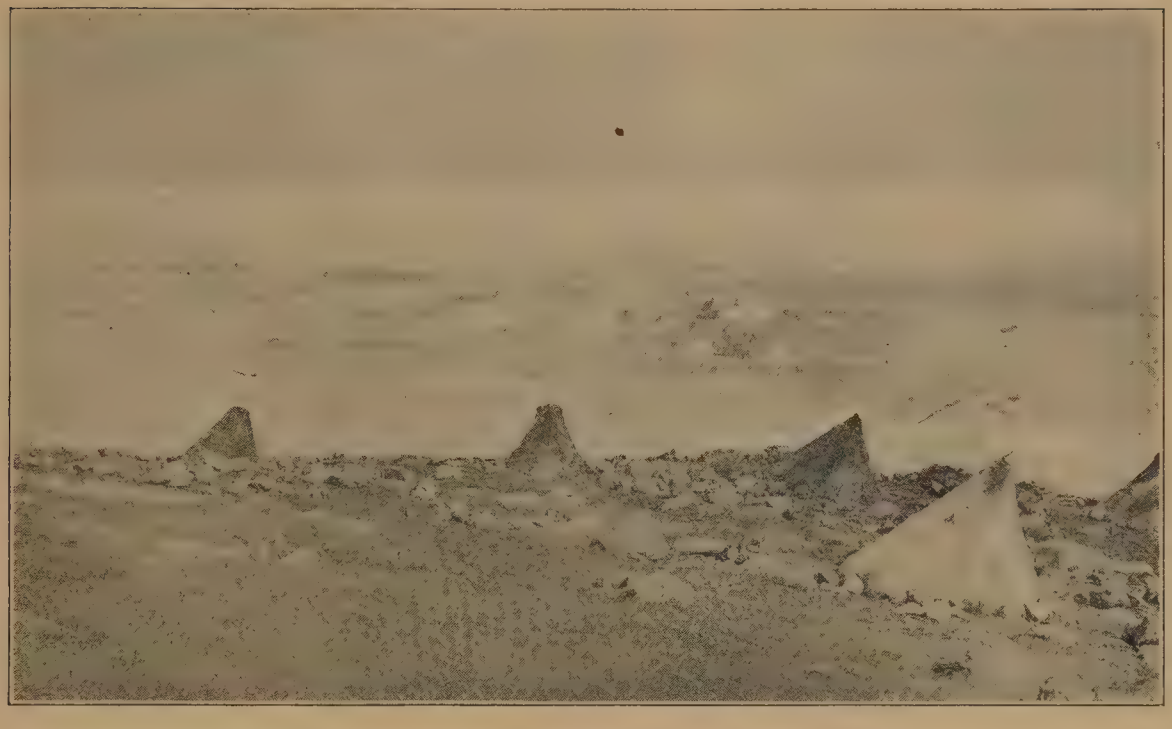
lake, and 5 miles back from the old shore line. This old shore line is 200 ft. above the present lake, and Plum Creek is 250 ft. above the lake, or 50 ft. above the level of the shore line of the glacial lake. The creek, therefore, has been at work eroding its present trough ever since the ice retreated from the southern watershed far enough to permit the water of the glacial lake to settle down to the level of the 200 ft. shore line. It is well known that this level was determined by the elevation of the coll at Fort Wayne, Ind., leading into the Mississippi Valley through the head waters of the Wabash River. Plum Creek, therefore, is as much older than Niagara as the time required for the retreat of the ice from the Mississippi watershed to its removal from the valley of the Mohawk in Central New York, amounting perhaps to 1,000 or 2,000 years.

Upon measuring a section of the eroded valley 5,000 ft. long, I was able to determine the total amount of work done by the stream since the beginning of its flow. Twelve years ago the village, in constructing waterworks, turned the course of the stream into a new channel, cut for it 500 ft. long, so that we are now able to estimate the rate at which this stream, under favorable circumstances, is carrying away material from the valley. As the full calculations and results are soon to be published elsewhere, I shall not go into details here, but will simply say that they are entirely inconsistent with a supposition of more than 10,000 or 12,000 years, as the period of the stream's activity. The calculations fully corroborate those which have been made concerning the age of Niagara Falls. The supposition that this creek has been at work for 100,000, or even 35,000 years, is absurd, in view of its present known activity.

3d. The small extent to which the innumerable lakes, ponds, and kettle-holes, which dot the glaciated region, have been filled up, leads to the same conclusion. Such are the forces at work to drain and fill up these depressions that a few thousand years is all that is required to bring them into their present condition. Many of them have been already obliterated, while the others show that the obliterating forces cannot have been in operation many thousand years.*

4th. Another confirmatory witness to the short time which has elapsed since the glacial epoch, is found in the small extent to which the surface of limestone strata, which were once highly polished through the action of glacial ice, have since that time been disintegrated and eroded by sub-aerial agencies. The activity of these agencies can be seen on the tombstones in any ancient cemetery, and in the exposed walls of old buildings. Now, in the glaciated region, where polished limestone surfaces have been exposed, there are frequently in close proximity areas that have been protected by superincumbent large boulders, which are standing on a low pedestal left in the process of surrounding sub-aerial erosion. But these pedestals are never

*See Author's *Ice Age in North America.*



MOST NORTHERN ESKIMO SETTLEMENT AT CAPE YORK, GREENLAND
Photo by Dr. Libbey

more than 2 or 3 in. in height, showing that a few thousand years would be amply sufficient to produce the results.

5th. Though there was a great destruction of animal species in connection with the closing stages of the glacial epoch, there has been little change since then in the species of plants that remain; while the identity of the species of plant life and the freshness of their remains found in glacial deposits make an irresistible impression of the proximity of the great ice age to the present time. In various parts of the United States there are the remains of red cedar forests buried beneath glacial drift in which the perfume of the cedar lingers as fresh as if cut but yesterday.

Comparing now the chronology of the human race in the Euphrates Valley, and that of glacial man in Northwestern Europe and in America, it would appear that they were for a time contemporaneous; and that the human race presented about as great extremes in culture then as it does now. With the exception of various labor-saving inventions, which have been made within the last three or four centuries, the civilization in ancient Babylonia was as far above that of contemporary Paleolithic man, living on the border of the ice-fields in England and America, as that of Europe is above that of the Eskimos, who live upon the borders of the Greenland ice-fields. Substantially the same differences in culture existed then as exist now.

Considered in its total result the progress of mankind has not been by any means so great as it is popularly represented to have been. Ten thousand years ago the human race possessed all the leading characteristics which it possesses at the present time. There were

ESKIMO WOMEN IN FRONT OF THEIR SKIN TENT, CAPE YORK, GREENLAND
Photo by Dr. Libbey

centers of high civilization in favored localities, and there were wide areas of barbarism and savagery, where man barely maintained his existence through a desperate struggle with the conditions of life. The same is true to-day, only the centers have shifted and some races have come into possession of knowledge, enabling them to control the forces of nature for certain purposes much more completely than ever before, but a large portion of the human race is still carrying on the struggle, while in possession of only the most primitive means of culture. The Stone Age has not wholly disappeared from the world.

The probable influence of the glacial epoch upon the early history of mankind will be best perceived by taking a general view or the progress of geological events in post-Tertiary time. In doing so it is important to note that the Tertiary period, which culmiated in the glacial epoch closed with a high elevation of land over all the northern hemisphere. This is evident from so many facts that we do not need to pause here for their full presentation. Briefly stated, the facts are that all the northern part of America stood at an elevation of between 2,000 and 3,000 ft. above that which it has at present. The same is also true of Northern Europe. During the Tertiary period, also, as is well known, all the high mountain chains of the world received their present elevation; marine strata of the middle Tertiary period being frequently found at an elevation of from 10,000 to 15,000 ft. above the sea. In the latter part of the Tertiary period, also, the animal species which now occupy the earth, attained their present characteristics, while a large number of closely allied species, which attained great prominence, flourished for a while, but in connection with the vicis-

situdes of the glacial epoch either became extinct, or shifted the center of their field of occupation. From the evidence of man's coexistence with them during the closing stages of the glacial epoch, it would appear that he, too, came upon the scene soon after the close of the Tertiary period, and was distributed over the surface of the earth, while the elevation of the Tertiary period still furnished land communication between the Eastern and Western Hemispheres.

Presumably this land communication was between Asia and North America in the region of Behring's Straits and Behring's Sea. Here an elevation of a few hundred feet would lay bare a vast tract of land, furnishing pasturage for animals and all the means of sustenance that primitive tribes would demand. The same amount of elevation would also lay bare a border of the American continent all the way to California, which is now only slightly submerged, and open the way for the dispersal through America both of man and of the now extinct animals with which he was associated.

Clear evidence that this was the course of events is shown by man's association with the mammoth. The remains of this huge species of elephant are found in great abundance in connection with those of man, not only over Northwestern Europe, whither they had migrated in one direction from their original center, but all over Northern Siberia, and the islands adjoining, and onward to Alaska, and over the northern part of the United States, penetrating, on the western coast, as far south as Mexico.

With these things in mind, we may now see how important a factor the glacial epoch probably was in affecting the destinies of man. This elevation of land at the beginning of the glacial epoch probably continued far down toward its close, when it was followed by a depression to a level considerably below that of the present time. This is clearly evinced by post-glacial marine deposits and beaches which are now found several hundred feet above the sea in Canada and Scandinavia. The extreme depression, as shown by these raised beaches, was in both places fully 1,000 ft. It is evident also that at the time of the extreme extension of glacial ice in America, the gradient of all the southern flowing streams was greatly reduced, indicating a differential northerly depression over the whole interior of the United States.

It is easy to see, therefore, that during the culminating period of the glacial epoch, man and his contemporary animals in America were shut off from communication with Asia, and the area from which they derived subsistence was greatly limited, both by the submergence of the continental shelf and by the great extension of the ice-fields, reaching in the Mississippi Valley, in Southern Illinois, the latitude of 38°. At the same time, there was a great incursion of the ice upon the fertile portions of Europe, Switzerland was obliterated, Great Britain nearly so, all Northern Germany was covered, and Russia to within a short distance of the Black Sea.

On the other hand, Central Asia seemed to receive a great increase of fertility. From recent investigations it appears that Siberia and Central Asia were not invaded by glacial ice.* But there was a great extension of the glaciers still existing in the high mountains. Those of the Thianshan range merit special mention. This vast mountain system rises in peaks to a height of 23,500 ft., or 8,000 ft. higher than the Alps; while its mass is estimated to be twenty times that of the Alps. Small glaciers still exist far up in the higher altitudes. During the glacial epoch they descended to the 7,000 ft. level, but never reached the great plains at a lower level. A subsidiary result of this extension of the mountain glaciers in Central Asia was a marked increase in the size of the mountain streams upon which the population of the plains depended for irrigation.

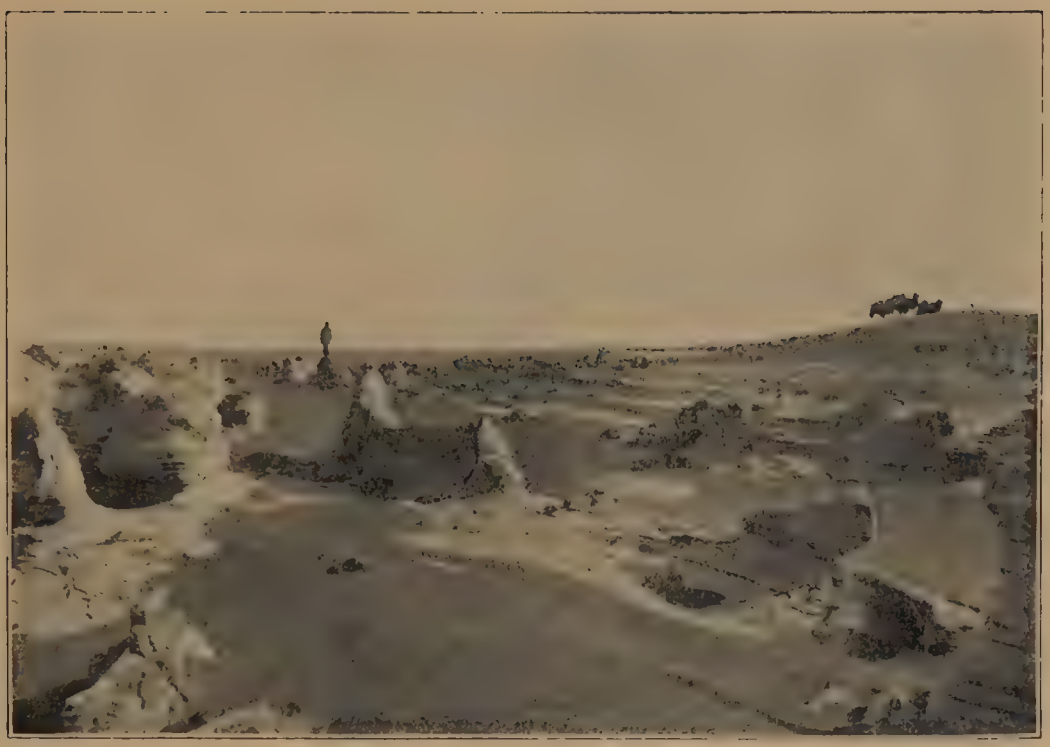
The importance of irrigation to the population of Central Asia is not generally appreciated. Our attention has so long been fixed upon Egypt and its dependence upon the Nile, that we have not given sufficient consideration to other regions dependent upon irrigation. Now, around the base of the Thianshan Mountains, there is an area many times the size of Egypt, whose life depends upon innumerable streams—large and small—which bring down their life-giving supplies of water in due season from the heights where it has been detained in unfailing cold-storage reservoirs far more regular and reliable than the lakes of Central Africa, which are subject to the vicissitudes of the annual precipitation and to the temporary obstruction of their outlets by the accumulation of vegetable matter.

The natural influence of the vicissitudes of the glacial epoch upon the development of life in Central Asia can be readily perceived. The conditions leading to the increase of glaciers in the mountains, especially those connected with the rapid melting of the ice during the declining portion of the epoch, would greatly extend the area of fertility and promote the interests of all forms of life. It is interesting to learn that this very region, which is the traditional center for the dispersion of the human race, and in which, beyond all reasonable doubt, the Aryan races had their original home, has recently been found to be an important center of pre-historic man. Prof. Raphael Pumpelly announces, as one of the results of the Carnegie Expedition to explore the pre-historic mounds of Turkestan, the discovery of remains of man, which he estimates to date from 8250 B. C., and of other evidence, showing that at about this time man had already succeeded in accomplishing the wonderful feat of domesticating the ox and several other animals**

The decline of the glacial epoch in Central Asia is connected, either as cause or effect, with the subsequent diminution of the size of the mountain streams and the general desiccation of that region, thus reducing its fertility. The result of this has been to intensify the

*See Wright's *Asiatic Russia*, 2 Vols. McClure & Co., New York.

*See his *Report to the Carnegie Institution*, Washington, 1906.



UNIRRIGATED SECTION OF LOP BASIN SOUTH OF ENDEREH,
CHINESE TURKESTAN

Photo by Ellsworth Huntington

IRRIGATED STRIP, WHICH WOULD OTHERWISE BE ABSOLUTE DESERT,
NORTH OF THE TIAN SHAN MOUNTAINS IN TURKESTAN

Photo by F. B. Wright

struggle for existence, to compel increased migration, and thereby to give a new impulse to new centers of civilization. It is worthy of mention, also, that the same diminution of glacial conditions in Central Asia which limited its capacity to support population, opened up the fairest portions of Europe and North America, and invited their occupation by man. In America we are but just entering upon our inheritance. America's great prosperity being largely due to the rapidity with which we are now seizing the reserved stores of richness accumulated in our soil by the glacial deposits and by the chemical changes which have taken place during the thousands of years through which it has since been lying fallow.

The disturbing influence of the glacial epoch is specially to be noted in the destruction of animal species, which, in some way, took place in connection with it, including, apparently, that of a large portion of mankind. At the close of the Tertiary period "the great Irish elk, the *machairodus,* and cave lion, the rhinoceros, hippopotamus, and elephant" roamed over Europe, and "equally large felines, horses, and tapirs, larger than any now living, a llama as large as a camel, great mastodons and elephants, and abundance of great megatheroid animals of almost equal size" were abundant in North America, "while in South America these same megatheroids in great variety, numerous huge armadillos, a mastodon, large horses and tapirs, large porcupines, two forms of antelopes, numerous bears and felines, including a *machairodus* and a large monkey," flourished. But all of these have become "extinct since the deposition of the most recent of the fossil-bearing strata,"* and their destruction can be very clearly traced to the vicissitudes of the glacial epoch.

In the glaciated regions the bones of all these northern species are found in abundance in the gravel and loess deposits connected with the closing scenes of the epoch, or in the bogs where the animals had been mired in the early part of the post-glacial period. That man shared in this destruction throughout North America and Europe is rendered altogether probable by the way in which his remains are associated with those of these extinct animals. These have been found in connection with the bones of one or more of the above-mentioned animals deeply buried in undisturbed beds of loess in definite relations to certain stages of the glacial recession at Omaha, Nebr.; Lansing, Kans., and Kiev, Russia. They have been found in similar connection with the bones of these extinct animals in various gravel deposits of glacial origin in the United States (notably at Trenton, N. J.), and in similar deposits, doubtless of the same age, in Northern France and Southern England, while a similar connection between these extinct animals and man is shown by still more abundant evidence in the results yielded by the excavations of numerous prehistoric cave dwellings in Northwestern Europe.

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*Alfred Russell Wallace, *Geological Distribution of Animals.*

At this point it will be profitable to turn our attention to the process by which this great destruction of man and his post-Tertiary animals was secured. Evidently the destruction was brought about largely as a result of the disturbance of conditions affecting the struggle for life between competing species. In the advance of the glacial ice in North America, for instance, animals and plants were driven southward from an area of 4,000,000 square miles; the southern border of which reached in Illinois nearly to the junction of the Ohio with the Mississippi River in latitude 38°.

It is impossible to over-estimate the strenuousness of the struggle for existence which was set up in the restricted area in the southern part of the United States and Northern Mexico, lying between the glacial conditions in the north and the tropical conditions, which prevented migrations southward across Central America. Then, again, upon the amelioration of the northern climate and the re-opening of the northern region to the animals which had survived the former changes of conditions, many of them re-occupied the ground, and began the struggle with new conditions, to which some of them, especially the mammoth, in due time, succumbed.

Local floods of enormous extent during the closing stages of the glacial epoch seem to have been connected in a marked degree with the destruction of both man and animals, which took place during this epoch. The remains of man, which have been found within the last few years in the loess of the Missouri Valley (referred to above), are connected with annual floods, which can be definitely proved to have risen 200 ft. These floods were occasioned by the rapid melting of the ice in the upper part of the valley, and the gorging of the water lower down, producing annually for a while in the latter part of each summer a temporary lake 1,000 miles long and from 70 to 80 miles wide. Similar conditions existed in the valley of the Ohio and down the Mississippi as far as Vicksburg.

At this time the depression which now contains Great Salt Lake in Utah, was filled up to a depth of 1,000 ft., and covered an area of 20,000 square miles, ten times that of the present lake. When at last this glacial lake surmounted its barriers and broke over into the Snake River Valley, it quickly brushed away 350 ft. of the dirt barrier which restrained it, and that depth of water rushed down the valley in a torrent as large as Niagara for 25 years.* The results of this are incomprehensible.

Likewise, in Southern Russia, if the loess covering that region is connected with the same stage of the glacial recession, man and his associates were there subject to a similar destruction by local floods. Distinct evidence of a great change of land level of that region at about that time appears in a raised beach of modern origin 750 ft. above the Black Sea at Trebizond. In fact, I think there is conclusive

*See Gilbert's *Report on Lake Bonneville, U. S. Geological Survey.* A summary is given in my *Man and the Glacial Period,* New York, 1900.

BOULDERS LEFT IN THE BED OF THE OLD OUTLET OF LAKE BONNEVILLE, AT POCATELLO, IDAHO

evidence that all Northern Siberia, Western Turkestan, and the larger part of Russia were depressed below sea-level in connection with the great earth movements which took place during the latter part of the glacial epoch.

At a corresponding period, also, the Tarim depression south of the Thianshan Mountains, was covered with water to a great depth. I had suggested* that this may have been occasioned at the time of the depression apparent in Northern Siberia by the water pouring over into the desert of Gobi, through the Sungarian depression, but Mr. Ellsworth Huntington, who has recently returned from an exploring expedition in that region, thinks that this accumulation of water in the Gobi basin was directly due to the glacial conditions, which gave to the glaciers in the surrounding mountains the vast extension to which we have already referred.** If that be so, it would be in close analogy to the enlargement of Great Salt Lake, the existence of both bodies of water being synchronous.

In the case of the Dead Sea, which Professor Hull has shown to have been filled with water within a comparatively recent time, he has suggested that this enlargement, like that of Great Salt Lake and Lob Nor, was a direct result of the glacial epoch, and of the accumulation of glaciers upon the mountains at the north. But as my investigations appear to show that the Lebanon Mountains never supported

*See *Scientific Confirmations of Old Testament History*, Bibliotheca Sacra Co., Oberlin, O., 1907

**See the *Geographical Journal*, vol. xxx, No. 3, Sept., 1907.

more than one glacier, and that a small one, on whose terminal moraine the famous grove of cedars is now standing, I am inclined to connect the temporary enlargement of the Dead Sea (during which the Jordan Valley was filled to a depth of 1,400 feet). to that post-glacial depression of land, which we have traced so extensively elsewhere, and of which Professor Hull and others have adduced such clear evidence around the eastern border of the Mediterranean basin. This depression was certainly 250 ft., which would be sufficient to admit Mediterranean water into the Jordan Valley through the valley of Esdrealon, whose highest point is only 215 ft. above sea-level.

That these great changes of land level were in some way connected with the glacial epoch is beyond question. And it is not difficult to perceive in the forces connected with this remarkable epoch, a cause for this unstable condition of the earth's crust so late as that of the pre-historic period of man's existence. During the glacial epoch at least 6,000,000 cubic miles of ice were piled up over the northern part of America and of Europe. For the production of this ice enough water would have to be abstracted from the ocean to lower its level 250 ft. the world over. Other high authorities would make the amount of ice twice, or even three times, that which we have indicated, with a correspondingly larger amount of water abstracted from the ocean.* But even on my own moderate estimate, we have a shifting of weight from the ocean beds to the limited area of glaciation, amounting to 24,000,000,000,000,000 tons, equalling the total weight of the North American continent. The transference of such an enormous weight from the ocean to the continents, and its subsequent return to the ocean is a force so inconceivable that we cannot estimate its efficiency in disturbing the equilibrium of the continents, and causing depressions and elevations of land out of all analogy to those which we have witnessed within the historic period. But pre-historic man evidently did witness these disturbances, and was profoundly affected by them.

Indeed, the story of the Noachian Deluge becomes easily credible to the attentive student of the shifting forces at work during the glacial epoch, and the rapidly changing conditions to which man was subjected during this trying period of his history may readily account, on the principle of Natural Selection, for the rapid differentiation of the race in its final distribution over the world.

While the results of our studies in the glacial epoch are not as definite in their results as one would wish, this important conclusion is established, namely, that in the early periods of the existence of the human race there was an instability of conditions arising from the instability of land levels, caused by the glacial epoch, which frustrates all attempts to reason backward by analogy from present conditions.

G. Frederick Wright.

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*See, Chamberlin and Salisbury's *Geology*, vol. iii, pp. 327-502.

BABYLONIAN BOUNDARY STONE, WITH FIGURE OF A KING, PROBABLY NEBUCHADREZZAR I.

BABYLONIAN BOUNDARY STONES

PROFESSOR W. J. HINKE, Ph.D., D.D., of Auburn Theological Seminary, is the author of a notable work, recently published by the University of Pennsylvania, through the generosity of Mr. Eckley B. Coxe, Jr., of Philadelphia, under the title *A New Boundary Stone of Nebuchadrezzar I,** which includes a discussion of all Babylonian boundary stones discovered up to the present. Some of these are translated for the first time by the author. The following summary is offered of this important scientific contribution, which otherwise might remain inaccessible to some of the readers of the RECORDS OF THE PAST, together with a selection from the illustrations of the work.

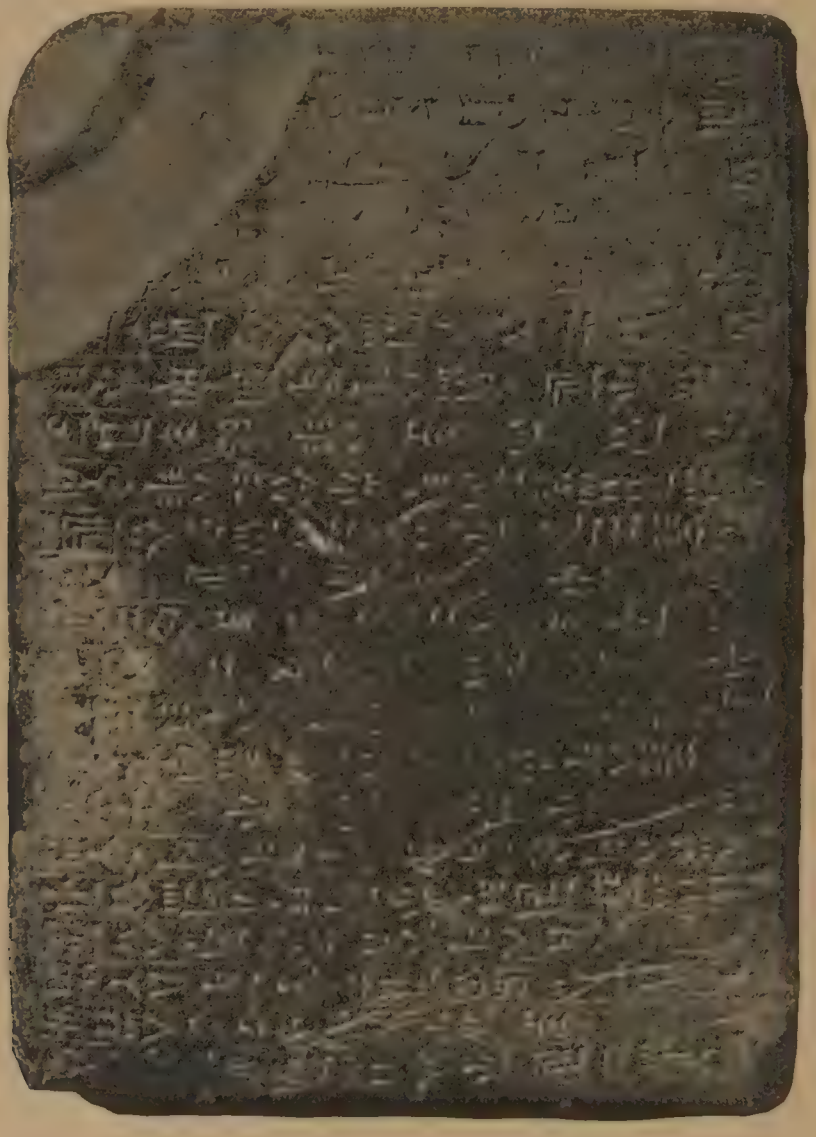
Among the innumerable monuments found in the ruins of Babylonia there are few which equal the Babylonian boundary stones in their many unique features. Not only do these boundary stones belong to the earliest Babylonian monuments which reached Europe (for the first one, the now famous Caillou de Michaux, was brought to Paris in the year 1800), but they were also among the first Babylonian inscriptions to be deciphered by scholars. In 1856, the French scholar, Jules Oppert, gave the first approximately correct interpretation of the Michaux stone. The number of the boundary stones that have been discovered has rapidly increased, so that at the present time 36 such stones are known to be in existence, 20 of which are with inscriptions intact or nearly so, and 16 fragmentary, some of them very small. They cover the period from the Cassite King Nazi-Maruttash, about 1350 B. C., to that of Shamash-shum-ukîn, or 650 B. C.

The boundary stones bear inscriptions, which contain grants of land. They correspond, therefore, to our modern deeds. Most of the boundary stones which have survived were placed on land granted by the king. It was only in later times that their use was also extended to land not granted by the king, but secured through purchase or given to daughters as their dowry. In one case a stone, shaped as the common boundary stones, was used to record the investiture of a priest of Nebo at Borsippa, with certain rights and privileges pertaining to his office.

Professor Hinke holds that there were usually two stones, one a large conical block, to be placed upon the field for the information of the public, the other a stone tablet (See p. 40), to be held by the owner as a proof of his ownership. The purpose of the public boundary stone was not to mark the boundary, for such a purpose a number of stones would have been necessary (as is the case in Egypt), but to

*Series D, Vol IV of *The Babylonian Expedition of the University of Pennsylvania*. H. V. Hilprecht, Editor, 1907, pp. xxvii, 323.

indicate and guarantee the ownership of the land. The ownership was indicated by the inscription, it was guaranteed by the curious divine-symbols (which are referred to later), placed on top of the stone, and the long-drawn-out curses, which are the most peculiar feature of these inscriptions. Through them the land and stone was placed under the protection of the deities that were invoked. As these were sacred stones in other parts of the Semitic world in which the deity was supposed to dwell (*cf. e. g.*, the declaration of Jacob: "This



STONE TABLET OF ELLIL-NADIN-APLU, CONFIRMING A GRANT OF LAND TO A TEMPLE OF THE GODDESS NINA AT DER

stone which I have set up as a pillar shall be the house of God," Gen., xxviii., 22), so the boundary stones of Babylonia were no doubt regarded as sacred because they were looked upon as instinct with divine life. They were placed under the special protection of NIN-IB, who is called "the lord of the boundary and of the boundary stone." Sometimes his wife, Gula, is associated with him and mentioned with him in the curse to tear out the boundary stone of the enemy.

BOUNDARY STONE OF KING MELI-SHIPAK, GRANTING LAND TO HIS SON, MARDUK-APAL-IDDINA I.

According to the legal transactions recorded on the boundary stones (which are called Kudurru in Babylonian), Professor Hinke classifies them under the following heads: (1) Such as contain a royal grant to a distinguished royal officer to reward him for some service rendered. Of this kind may be mentioned as an example a boundary stone of King Meli-Shipak. It contains the longest inscription of this sort, 387 lines in 7 columns. By it the King deeded a tract of land consisting of 84 *gur* 160 *qa* of cultivated land of the town Tamakku,

of the communal land of Akkad, at the Royal Canal, to his son and successor Marduk-apal-iddina I. The remarkable feature of this grant is that the King compensated the people whose land he took by assigning other land to them. We have now no less than 9 boundary stones, conveying land by royal grant to distinguished officials. The latest one is of interest to Bible readers because it contains a grant of land by King Marduk-apal-iddina II, the biblical Merodach-baladan (*cf.* Isa., xxxix:1, ff., 2 Kings, xx: 12-19), to Marduk-ahê-erba, a dignitary of Babylon. Four tracts of land were granted to him, in the presence of Iqisha-Marduk, the King's son, and 9 dignitaries of the realm, in the seventh year of Merodach-baladan, or 714 B. C.

(2) A second kind of boundary stones, records grants made to fugitives. There are two examples of this kind. One of them states that Shamûa and Shamai, two priests of the god Eria fled from Elam to King Nebuchadrezzer I, who not only received them, but went with them to Elam, accompanied by an army, devastated Elam and transferred the statues of Marduk and Eria to Babylonia. The statue of Marduk was taken to Babylon; the statue of Eria to a town Hussi, in the district Bît-Sin-asharidu, not far from Opis. There the priests were settled and a tract of land was granted them to be held by them as temple property. It was also freed from all imposts and territorial obligations.

(3) A third class of boundary stones, according to Professor Hinke, records grants made to temples. This group includes the oldest boundary stone which has come down to us. It belongs to the reign of Nazi-Maruttash, who granted several tracts of land, in all 700 *gur,* to the god Marduk. But only 494 *gur* were given directly to the god, the remaining 206 *gur* were given to Kashakti-Shugab, son of Ahu-bânî, the priest of Marduk. The characteristic feature of this stone consists of two medallions, placed alongside of the inscription, which inform us that "Kashakti-Shugab, son of Ahu-bânî, wrote a memorial tablet of terra cotta and set it up before the god. In the reign of Marduk-apal-iddina, the son of Meli-Shipak, a wall fell upon that tablet and broke it. Shuhuli-Shugab, son of Nibi-Shipak, wrote upon a new monument of stone a copy of the original and set it up." This interesting statement shows that the priest himself wrote the original inscription, which he put into the archives of the temple for safe keeping. This original was of terra cotta, but stone was substituted when the terra cotta tablet was broken. This indicates, Professor Hinke concludes, that stone tablets had not always been used, but originally clay tablets, such as were used for all other purposes, were employed.

(4) A fourth group consists of grants involving restorations. For example, King Nabû-apal-iddina (*c.* 865 B. C.), granted the restoration of a certain tract of land to a priest, Nabû-apal-iddina (a namesake of the King), after it had been bought by his uncle. Nabû-apal-iddina appealed to the King for its restoration on the plea that it

BOUNDARY STONE OF KING NAZI-MARUTTASH FOUND AT SUSA

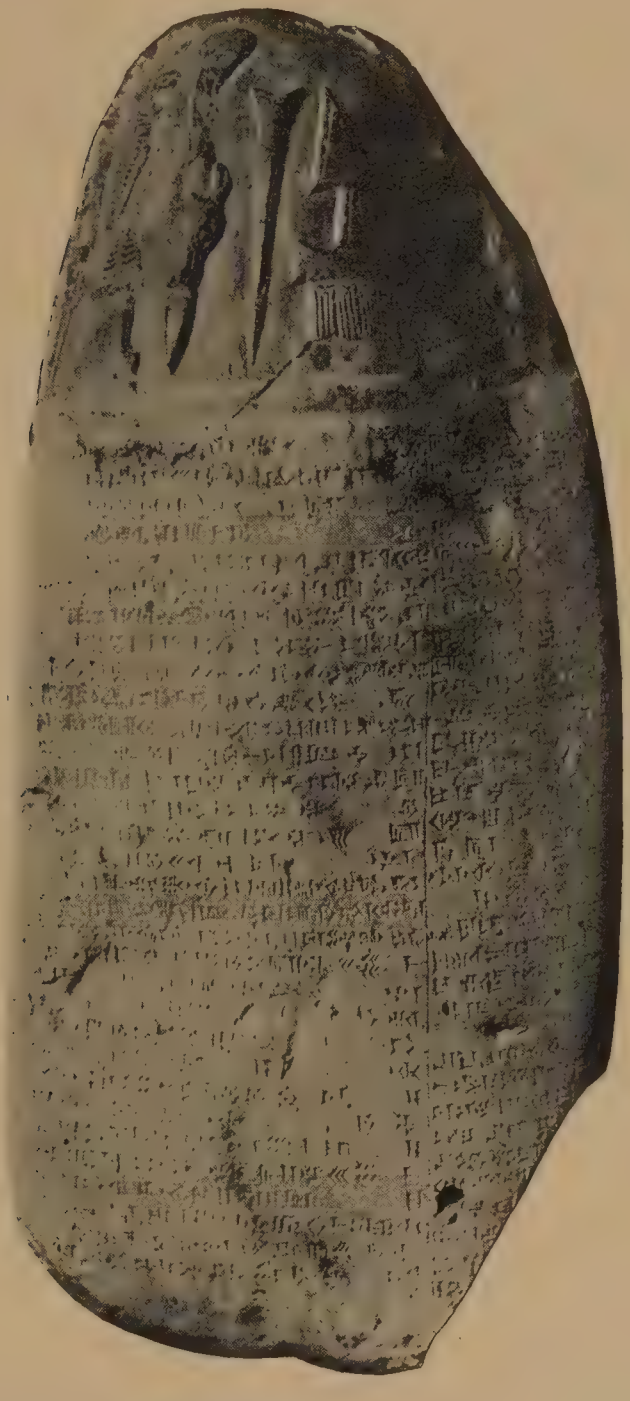
was a part of the family estate which should not be alienated from the family. The request was granted by the King.

(5) Several boundary stones contain grants involving lawsuits. A stone of Marduk-apal-iddina I. states that a certain tract of land, situated at the banks of the canal Mê-dandan, in the district Hudadu, had been given by Meli-Shipak to his servant Munnabittu, son of Tâbu-melû. Officials of the King had surveyed the field and it had passed into the possession of Munnabittu. Unfortunately the King

failed to give him a deed. Meanwhile Munnabittu remained in peaceful possession of the land till the first year of Marduk-apal-iddina I., when one of his neighbors, Ahunêa, son of Daiân-Marduk, claimed a part of the field. Munnabittu appealed to the King, who summoned Kidin-NINIB, the former governor, under whom the field had been granted, and the old city officials, whom the King questioned about the field. They were unanimous in saying that the field belonged to Munnabittu. The King thereupon sent the governor and a scribe, who measured the field and found it to be 30 *gur,* as Munnabittu claimed. In view of this evidence the King confirmed the land to Munnabittu.

SYMBOLS ON A BOUNDARY STONE OF MARDUK-APAL-IDDINA I., DISCOVERED AT SUSA

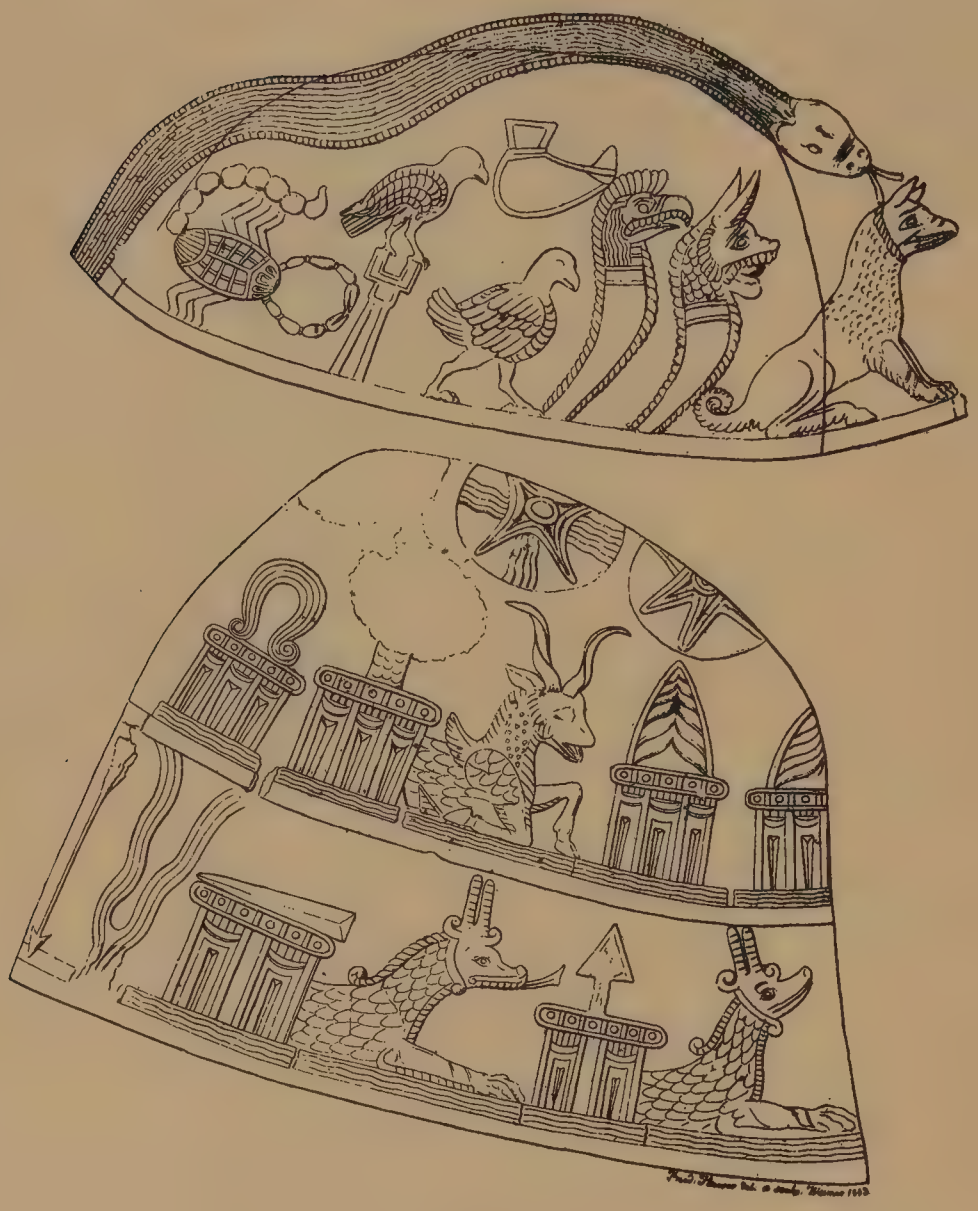
(6) Another class of royal grants are really charters, by which exemption from taxation and immunity from forced labor was granted, sometimes in connection with a grant of land, in other cases it was a charter pure and simple. The former kind is illustrated by the stone published by Professor Hinke, which is a grant of land made by King Nebuchadrezzar I. to a priest at Nippur, Nusku-ibni, son of Upahhir-Nusku. In this case the grant of land was accompanied by the following exemptions: No outsider was allowed to make use of the pasture lands; no canal officer was permitted to impress a canal digger into service, nor could land officers cut down any grass. In



BOUNDARY STONE OF NEBUCHADREZZAR I., FROM NIPPUR

other inscriptions, as the grant of Meli-Shipak to his son (mentioned above), or the charter of Nebuchadrezzar I. to his distinguished general, Ritti-Marduk (V. R., 55-56), the immunities were much more numerous.

(7) In later times, Professor Hinke maintains that the use of boundary stones was extended to the transfer of private lands from one individual or family to another. In this class there are two subdivisions. One which represents dowries granted to daughters, the other purchases of land. Of the first, the famous Caillou de Michaux



SYMBOLS ON THE CAILLOU DE MICHAUX, NOW IN PARIS

is an example. It records a grant of 20 *gur* of cultivated land, at the canal Mê-dandan, in the district Bit-Habban, by Sir-usur, son of Habban, to his daughter Dûr-sharru-kênaiti, bride of Tâb-ashab-Marduk. In this transaction the bridegroom had to swear "by the great gods (Anu, Ellil, Ea), and the god Sir (probably the family god), not to make any claim for that field."

As an example of a deed for a purchase of land, Professor Hinke mentions one from the reign of one of the first kings of the PA-SHE dynasty. It records the purchase of 5 *gur* of land by Marduk-nâsir, an officer of the king, from Amel-Ellil, son of Hanbi, for one wagon, several horses, asses, oxen, harness, grain, and clothing, in all worth 816 pieces of silver.

A *kudurru* inscription, Professor Hinke informs us, usually contains 5 or 6 parts. In four cases the stone has a name, *e. g.*, "Ninib and Nusku establish the boundary." Then follows a description of the field. The total area is given and the different sides are carefully bounded by referring to the adjoining properties. Next is found a statement as to the historical circumstances that led to the grant. Then follows a series of injunctions against all kinds of officials who might interfere with the land, its area, and its privileges. The next section, which is the most characteristic feature of these inscriptions, contains the curses. The gods are invoked and are asked to send all kinds of diseases or calamities upon the would-be offender. Finally, the witnesses are given, and in some cases the date is added. The curses are remarkable for the extraordinary variety and their large number. On a stone of Marduk-apal-iddina I. (Susa, No. 16), 47 gods are invoked, arranged in pairs and groups. The number of all the gods invoked in the curses is 58, thus far, but only a dozen occur frequently. Professor Hinke tells us that in all there are about 100 curses on the various boundary stones, uttered in the name of about 30 gods. The most characteristic curses are as follows: Ea is asked to send melancholy; Gula, a destructive sickness; Ishtar, loss of weapons in battle; NIN-IB, removal of boundary and death of children; Nusku, burning of root (destruction of family), and headache; Rammân, destruction of fields through floods; Sin, leprosy; Shamash, blindness, deafness, and lameness; Zamama, bad luck in battle.

Several of the boundary stones have a picture of the king who made the grant, in some cases also a picture of the person to whom the land was granted. We have pictorial representations of one of the first kings of the PA-SHE dynasty,* probably Nebuchadrezzar I.; also pictures of the kings Nabû-mukîn-aplu, Nabû-apal-iddina, and Merodach-baladan II.

The most remarkable features of the Babylonian boundary stones are the symbols sculptured on top. Professor Hinke has made these the subject of special study. He mentions the various theories about their meaning. But from one of the stones recently found at Susa by the French (Susa, No. 1), we now know definitely, as the author says, that these figures are emblems of the gods, because the names of the gods are written on the symbols. Here we find the spearhead ascribed to Marduk, the mace (club) with the vulture head to Zamama, the mace with the lion head to Nergal, the mace with the square top to Shuqamuna, the walking bird most likely to Bau, the shrine with goat-fish and ram's head to Ea, the lamp to Nusku, the seated goddess to Gula, and the serpent to Siru. The names of the other symbols have been effaced. However, we know from other stones that the crescent stands for Sin, the sundisk for Shamash, the eight-pointed star for Ishtar. Besides these, other symbols can be

*See p. 38.

THE ARCHER, FROM A BABYLONIAN BOUNDARY STONE

SYMBOLS ON A BOUNDARY STONE FOUND AT SUSA, WITH THE NAMES OF THE GODS WRITTEN ON THE SYMBOLS

THE ARCHER FROM THE EGYPTIAN ZODIAC OF DENDERA

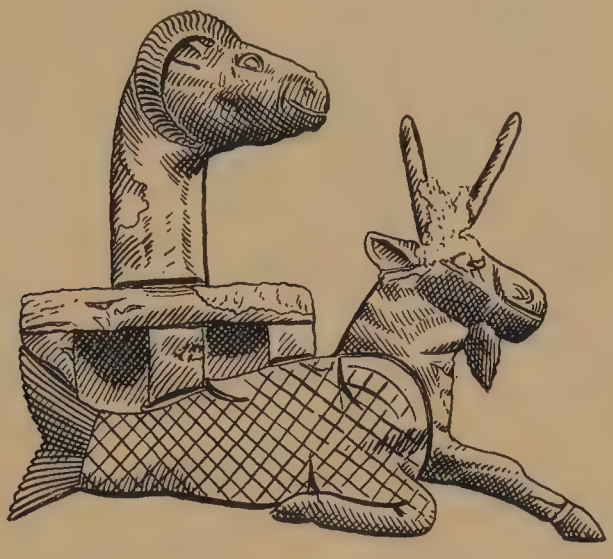
identified with certainty, with their respective deities. Some of these identifications have been made for the first time by Professor Hinke. The two shrines with tiaras stand for Anu and Ellil. The forked lightning for Rammân, the square column (or shrine with wedge), for Nabû, the mace with two lion heads for NIN-IB, the 7 stars for the Sibitti, the shrine with the yoke-like figure (really the plaits of hair), for Ninḫarsag or Ninmah, and the scorpion for Ishhara. As a result we have thus far been able to identify 20 symbols with their corresponding deities. But the symbols are more than mere emblems of the gods. An astral character was ascribed to the gods of Babylonia. The constellations of the heavens were regarded as the dwelling places of the gods. The stars were under their control. They guided them and kept them in their courses. The most important of the heavenly constellations were the signs of the zodiac, and hence we find that some of the symbols on the boundary stones represent, not only the gods, but also their corresponding signs in the zodiac. The clearest case is that of the Archer or Sagittarius. By comparing the Archer as he appears on one of the Babylonian boundary stones (London, No. 101) with the same figure on an Egyptian zodiac, found in the temple of Dendera (dating from the time of the Roman Emperor Augustus), it is readily seen that the figures are identical and that the Egyptian figure, which undoubtedly represents a sign of the zodiac, is borrowed from the Babylonian. In both figures we find a winged centaur, drawing the bow, with a double head, one human, the other animal, and a double tail, one of a horse, the other of a scorpion. The same similarity is shown in the Babylonian Capricorn or Goat-fish, compared with the Egyptian, and in the Babylonian and Egyptian Waterman, or Aquarius. Hence, there can be no doubt

that at least some of the figures on the Babylonian boundary stones represent signs of the zodiac. But as there are more than 40 different signs on the various stones, Professor Hinke holds that other stars must be represented. Now, it is a remarkable fact that on a marble plate, recently found in Egypt, two circles of constellations are represented, both containing animal figures, the outer circle showing the signs of the zodiac. Moreover, a Greek writer, named Teucros, the Babylonian, whose astrological work has recently been published, shows that the inner circle was called "dodekaoros," *i. e.*, "twelve-

MARBLE PLATE FROM EGYPT, SHOWING THE ZODIAC AND THE "DODEKAOROS"

hour circle." Now it is well know that the double hour, called KASH-BU, was the common Babylonian measure for time and distance. Moreover, the double hours could not have referred to the ecliptic, because each twelfth part of the ecliptic rises at unequal intervals in the latitude of Babylon. To secure 12 equal divisions of the calendar day, the 12 parts must refer to the heavenly equator. This equatorial circle, Professor Hinke says, was, therefore, earlier than the zodiac circle, which was derived from it, and both go back to Babylonia. Several of the animals found in the equatorial circle seem

THE GOATFISH (CAPRICORN), FROM THE ROUND ZODIAC OF DENDERA



THE GOATFISH (CAPRICORN), FROM A BOUNDARY STONE OF MELI-SHIPAK

to be represented also on the boundary stones, for we find there the ox of Rammân, with the lightning-fork, two birds, one walking, the other perched on a pole, corresponding to the ibis and falcon on the "dodekaoros." There is also a horse, a dragon with wings, a sheep, and a crocodile-like figure. All these occur in the "dodekaoros." Although it cannot yet be established beyond question that the figures on the boundary stones really represent those of the equatorial circle, Professor Hinke thinks that it is at least probable.

The significance and importance of these symbols lies, however, in the fact that they represent the earliest astronomical charts in existence, and go far to show that Babylonia was the home of ancient astronomy.

This summary of Professor Hinke's elaborate discussion of Babylonian boundary stones, which contains so many important discoveries and observations, will serve to illustrate the advanced state of civilization in the second millenium B. C., as well as to determine the origin of much of that with which we become familiar in later times. The work which takes such high rank as a scientific contribution is a most excellent production of American scholarship, in which the author may justly take pride, for the volume will serve as the basis for future studies in this interesting class of inscriptions.

ALBERT T. CLAY.

University of Pennsylvania, Philadelphia.

STONE GRAVES OF NORTHWESTERN ILLINOIS

PHYSICAL FEATURES OF THE DISTRICT

THE district to which attention is now called is that rugged and broken, loess-capped margin of Jo Daviess County, bordering the Mississippi Valley for 35 miles, southeast from the Wisconsin line, and more particularly the central portion of this shore-land district about Portage Station on the Illinois Central Railroad.

The physical features are mainly those of the "Driftless area of Wisconsin," so ably described in a joint memoir by Messrs. Chamberlain and Salisbury, in the Sixth Annual Report of the United States Geological Survey. The valley of the Mississippi, 2½ miles broad, extends from northwest to southeast, along the border of the county, the great river washing the Iowa shore and leaving, on the Illinois side, a wide, low plain, a network of sloughs and silted ancient channels.

Less rugged in parts than the Iowa shore, the Illinois shore is nevertheless a picturesque land of bold limestone cliffs, deep ravines, and broad, flat-bottomed tributary valleys. At the foot of the cliffs lies a mile's width of crooked sloughs, an ideal refuge and fishing or hunting-ground for a primitive people. Along the shores can be found the refuse litter of their villages, buried more or less deeply by river mud or humus, and the cliff summits above are crowned with the tumuli of their dead.

Here, in the now silent valley, was once the stir of primitive village life. Here, we see, were clustered little villages of fisher folk, at short distances, along the shore wherever the sloughs washed close in beneath a rugged cliff, and it is not difficult, as the spade exposes to view the firestones of their hearths, to re-animate the scene and hear again the sounds of village life, as the sun casts a rose light over the cliff faces and sinks beyond the dark Iowa shore. Just so the sunset came in those far-off days, and the darkness gathering over the hill of the dead crept down from forest depths through dark ravines about the blazing hearths. And later, when the moon silvers the valley, and the voice of the owl comes spectrally over the flooded bottoms, we behold again the mortuary rites on the clay platform at Mound 16.

It is impossible with the pen to convey the full depth of the romantic charm which hangs over this beautiful valley. One must see it in its countless moods, in the golden autumn, or on bright, spring days, or on gray days when the mist hangs over the Iowa headlands, and again in the dew damp of early morning.

It is not difficult to understand why we find along the shore traces of a sedentary or semi-sedentary people. Primitive man was moulded everywhere by his environment, and similar conditions developed throughout the Mississippi Valley a more or less related culture. Bearing this in mind, the value of special studies in restricted fields becomes evident, and we see that if a concentrated penetrating light can be thrown on any one section of this wide area, or better yet on a hundred such districts, no matter how small the district studied, such work is more to the purpose than superficial investigations for the sake of "collections" prosecuted promiscuously over the continent.

THE STONE GRAVES

THE GRAVES AT PORTAGE

The terminating knolls of both ridges at Portage present much the same appearance, except that the western hill presents a precipitous face on the side toward the Mississippi, rising clear of the talus some 45 ft. The summit of both knolls attains an altitude above the valley of approximately 125 ft., and the graves were located on the south and southeast and southwest slopes, and were found only on the terminal knolls. The soil is the fine, yellow loess, much more easily worked than the more elevated summits to the north, and, except in Grave II, the shallowness of the graves would indicate that a soft, yielding soil would have been a desideratum in the location of the graves. It is to be noted, however, that the spot is one singularly well chosen, if the dominant idea had been to place the graves within view from the villages on the plain below.

Near the center of the southwest face of the cliff at the western knoll is an immense vertical rift or recession, from which two tortuous passages ascend, the one to the right for a space of 20 ft. behind the face of the cliff.

The walls of these rifts are burned red throughout as are many other crevices, as though resulting from the working of the chert veins with fire. At the cliff's edge above, a portion of the ledge, now in the grasp of the roots of a long dead cedar, is burned deeply. The stump of this cedar shows 188 annular rings, and its dead roots extended through Grave II.

In none of the graves was there any attempt at a cist or stone enclosure, as in a true stone grave, but the flat slabs of limestone were thrown in upon the bones or lay in the form of a rude pavement above the interment as at Graves II and III. There were no surface indications of the burials other than an occasional outcrop of part of a stone, which doubtless the wearing away of the surface in recent years has exposed. There was no break or irregularity in the surface contour to indicate a burial below.

GRAVE II

Four stones outcropping slightly in the sod of the hillside were found to be the southeast end of a rude pavement, a foot wide, extending about level for 6 ft. northwest, under the top-soil. The top-soil, about 6 in. deep, was cleared away, and a sketch of the pavement made, which consisted of 18 irregular weathered pieces of limestone burnt red at one point. One large stone lay detached to the east, having one burnt corner, evidently a displaced stone of the pavement.

Charcoal was found at a depth of 6 in. and in increasing quantity downward through the yellow earth and all among the bones of the skeleton. The grain of the wood resembles cedar and oak. Except for the presence of the charcoal and a few lumps of harder earth or ash, there was no indication of a disturbed soil until the immediate vicinity of the skeleton was reached.

At a depth of 2 ft. 6 in. under the center of the pavement was charcoal, which seemed to be like a thin, curved board, the convexity upward, and just north of this was a small circular spot of charcoal. The largest quantity lay over the thighs, at a depth of 2 ft. 10 in., and from this there were scattered bits down to a contact with the bones at a depth of 3 ft. Other small patches lay 4 and 7 in. higher, over the left hip and pubis.

The earth within the grave was as compact as elsewhere; there was no discoloration, and except for the distribution of the charcoal no way to determine the size or limit of the grave. It is difficult to understand how a grave could have been excavated to a depth of 3 ft. or more and refilled without producing a mixture of earth either within the grave or in the top-soil along the edges of the excavation.

The skeleton, in a fine state of preservation, lay extended at full length on its back, with the shoulders, neck, and head slightly raised, and the chin resting upon the breast at a depth of 2 ft. 6 in. The face was turned slightly to the right, as if gazing in a long, last look down the great valley. The right hand rested across the pubis, the finger bones falling just over and inside the head of the right femur. The left hand lay beneath the pelvis and under the shaft of the left femur. Two-thirds of the distance along the inner side of this femur were two small, flat, triangular arrow-points of translucent quartz, or flint. The larger one is pure white 1 3-10 in. long and quite narrow, and the other, except for one white corner, is a beautiful dark red, not quite an inch long and a little broader proportionately.

The body of the skeleton and the lower extremities lay at a depth of 3 ft. 1 in., and the thorax at 2 ft. 9 or 10 in., the whole extending in a direction N. W. to S. E., nearly parallel with and nearly below the pavement. The right patella and part of the bones of the right foot were displaced, probably due to the burrowing of rodents.

STONE GRAVE VII, PORTAGE, ILL.

The skeleton is that of a man well advanced in years, whose height would have been 5 ft. 6 or 8 in. The feet and hands were small.

The skull was not crushed, but the pressure of earth above had driven the upper jaw down within the lower jaw. There were no very remarkable osteological malformations. The cartilaginous portion of the first rib on either side had ossified, and was attached wing-like to the sterum. A piece of thin, flat bone, found beneath the right fifth rib, was probably ossified costal cartilage.

High up, within the abdominal cavity, at a depth of 2 ft. 7 in., we came upon a small pot or jar, 3¾ in. high, and 4½ in. wide in the bowl, and 2⅞ in. at the neck, with a half-flaring lip. It is this jar, as well as the manner of burial, which stamps this grave as unique in the district. It stood in the grave right-side up, with the ears placed diagonally across the grave, *i. e.*, east and west, filled with yellow earth and fragments of charcoal. The circular spot of charcoal previously mentioned would have been just to the west of this jar, but it had been removed on the previous day. The material of which the jar is made, as ascertained at the square perforation in the bottom, is clay tempered with pounded shell, 5-16 in. thick, and it is so well

burned as to ring when struck or handled. The shape is uncommonly graceful although the ornamentation is not quite accurately spaced, and does not carry to quite the same point in the design beneath each ear. The color is pink or light red; the surface is scaled off in several places and the bottom and west half were smoked black previous to the perforating, or "killing" of the jar, as the edges of the fracture are perfectly clean and free from smut. This perforation will be conceded an interesting feature, and, as we have said,stamps this grave as unique in the district, so far as known.

GRAVE V

Especial attention is invited to a consideration of the singular conditions found at this grave, and similar graves on these terminal knolls, therefore no apology is needed for incorporating here such details of the original investigation as seems to be required for a proper understanding of these seemingly jumbled heaps of stone and bone.

One of the heaps has no stone covering, and, perhaps, belongs to another period, although the mode of interment is somewhat similar.

There were no indications on the surface here whatever of the puzzling mass of stone and bone concealed below, and the burials were only located by trenching from Grave II, although many of the stones were but 4 to 6 in. below the sod and rested frequently in contact with the bones which they had crushed. There were 2 and 3 tiers or layers of slabs here, with part of the skeletons under and between them, with no attempt at an orderly arrangement. Necessarily the bones were crushed and scattered, but aside from this there were abundant indications of injuries received previous to interment, perhaps in removing them from temporary scaffolds or graves. We found that parts of some skeletons lay in natural sequence, showing that some of the ligaments still held at the final interment, while other portions were widely scattered in great disorder.

Parts of 3 skeletons were found in each heap, making a total of 9 for Grave V. Many of the stone slabs were 4 to 6 in. thick, and could have been brought here only at considerable labor, from the foot of the cliff.

Not all of these graves presented the same, nor even an approach to the disorder seen in Grave V. Grave I was a shallow burial and contained the fragile bones of an infant, and Grave III, on the eastern ridge, contained a deeper interment of an infant skeleton, with a fragment of deer antler, covered by a large heap of well-laid stones, none of which were in contact with the skeleton. Grave VI contained also one of these deeper burials, an adult skeleton in fair condition, except for some fractures, with none of the stones in contact with the bones. The stone covering here lay mainly southwest of the skeleton, that is, down the slope, and consisted for the most part of smaller and

more angular blocks of limestone than those of Grave V. Few of the stones were in contact, one with another, but lay more scattered through the earth, quite to the edge of the quarry face, which falls here sheer to the base of the cliff. North of Grave VI was a little bed of "fire stones," like those found near Grave V.

Grave VII, of which we present a photo, when the stone covering had been exposed, bore more resemblance to Grave V. Two skeletons were here huddled together, and more or less injured by the rocky covering above.

The stones here where much disintegrated, and apparently were originally unusually rough stones, much weathered, unlike those at Grave V. One large stone, lying on the bones of both skeletons, was penetrated by a natural perforation.

STONE GRAVE VI,
PORTAGE, ILL.

On the outer surface of the great toe, metatarsus, of both feet of the larger skeleton are marks of some instrument, or possibly marks of teeth of animals, and the outer anterior surface of the right humerus presents a similar mark, showing striæ left by the instrument.* Other bones exhibiting similar markings are both femora, on the outer anterior surface, and in the smaller skeleton the right ulna, left humerus, and right femur. In the last-mentioned instance a transverse fracture evidently resulted, and on the reverse side a splinter of bone was chipped out by the blow, or in bending the fractured bone, much as a pine stick is sometimes splintered on the reverse side, where the saw has not made a finished cutting.

With the exception of Grave II, these graves were barren of all mortuary offerings other than the turkey bones and unio shell at Grave V, and the antler in Grave III.

The relative age of the stone-covered graves is perhaps not much less than that of the long mounds. The mode of burial is similar, and the absence of anything denoting white contact, places them, so far

*Possibly these striæ and markings are the result of rodents gnawing the bones—a common thing in such graves.

as examined, well back in time. The dry earth of the terminal knolls of both ridges is a factor toward the preservation of the remains not to be lost sight of, even when the shallowness of the burial is considered.

The stones of the Graves appear to have suffered less disintegration than stones buried in some of the round mounds, notably at Mound 16, but here again we need seek no further for an explanation than in the relative greater degree of dryness of the end of the ridge.

W. B. NICKERSON.

Chicago, Ill.

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BOOK REVIEWS

LIFE IN THE HOMERIC AGE*

PROFESSOR SEYMOUR'S volume on *Life in the Homeric Age,* published last autumn, forms a most fitting climax to his lifework, and will be a lasting monument. It is, indeed, fortunate that he was able to thus sum up his investigations in such a volume, and see it safely through the press before his death.

Professor Seymour does not intend this volume as a study of the origin of the Greeks, or their civilization, or the relation of the Greek to the Roman gods, for he does not consider that Homer wrote his epics for the benefit of the archæologists, or with any intention of conveying archæological information, nor does he even consider them as partaking of the nature of an historical novel. He does think, however, that there is much of archæology to be gathered from these poems by careful analysis. And surely no one was better fitted to make such an analysis and draw conclusions than he. Considering the poems from this standpoint, it becomes evident that Homer's failure to mention a custom does not prove that such did not exist, or was purposely omitted by him. "But," he says, "where the poet directly mentions an object or a custom, we may believe this to have been known and somewhat familiar to the Greeks of his own day, unless other evidence appear (and none has appeared as yet) to the contrary. But though the poet endeavored to depict the manners and life of his time, he may not have cared, or, indeed, have been able, so to revise all the allusions to earlier customs in the poetic material which he used, as to make it agree exactly with later usages. So, in-

**Life in the Homeric Age*, by Thomas Day Seymour. pp. xvi, 704. Maps and illustrations. The Macmillan Company, 1907.

dications of earlier manners of life still might remain. Even the wanderings of Odysseus have archæological value as presenting in the main such a view of the regions beyond the actual knowledge of the Greeks of the poet's time as might readily be formed on the basis of the stories of Phœnician sailors and traders. The accounts of the short nights of the Læstrygonians and the unending nights of the Cimmerians may have come not by sea but by land, together with amber, over a trade route from the Baltic, but this does not alter the principle."

In general, however, Homer's picture of the life of his age is the "earliest account extant of the culture from which our own is a true lineal descendant," and hence of special interest.

Homer's knowledge of geography was limited and references outside of Greece are, as a rule, very vague. As to the "pre-Hellenic inhabitants of Greece, Homer says nothing distinctly."

Professor Seymour discusses the various sites supposed to be that of classic Ithaca, and, following Doctor Dörpfeld, rather favors Leucas as the site; however, he admits that the archæological excavations, although they prove the site to have been inhabited in pre-Doric times, yet do not prove the identity of the site of Leucas with the Ithaca of Odysseus.

After discussing these more general subjects, Professor Seymour takes up the private, public, and social life, which receives more light from the epics. The state he considers as "primitive," but "not barbarous."

One most interesting chapter is devoted to Women and the Family, Education, and Recreation. One point brought out is that the Homeric women were not secluded. Of educational institutions, there appears to have been one, *i. e.*, the "boarding school," conducted by the centaur, Chiron, situated on Mt. Pelion, where the Achæan youths were trained as warriors.

Space will not permit the mentioning of the innumerable interesting and suggestive points brought out in his chapters on: Dress and Decoration, House and Furniture, Homeric Food, Homeric Property, Slavery, Trade, Sea Life and Ships, Agriculture, Plants and Trees, Animals, Olympus and the Gods, Hades, Temples, Worship and Divination, The Troad, Homeric Wars and Arms.

An idea as to the enormous amount of material gathered in this book is given by the foregoing innumeration of the chapters. It is a book of interest to every one who has the slightest classical knowledge, while with its Bibliography, English, and Greek index, it is of great value as a book of reference for all classical students.

FREDERICK B. WRIGHT.

LINCOLN IN THE TELEGRAPH OFFICE*

This attractive volume furnishes an interesting account of Lincoln as he appeared to the members of the War Department Telegraph Office staff, from 1861 to 1865. The author was on the staff during the whole time and writes from his diary and the official copies of telegrams sent, as well as from recollection. Lincoln was always deeply interested in the work of this office. There it was that he learned the latest news from the front. There he spent many hours while the cipher-operators were working on dispatches, both those from Union generals and those of Confederates, which had been intercepted. In this room the President was less liable to interruption than elsewhere, so it happened that he wrote the first draft of the Emancipation Proclamation while sitting at the desk of the chief of the office. The tension was relaxed and the telegraph corps saw him in his every-day humor, showing his love for his children and his kindly, charitable disposition.

HISTORY OF ANCIENT CIVILIZATION.** HISTORY OF MEDIAEVAL AND MODERN CIVILIZATION***

The *Historie de la Civilisation,* by M. Charles Seignobos, which proved so acceptable to school teachers in France, has been translated by Prof. Arthur H. Wilde, of Northwestern University. Two of the three volumes have already appeared, while the third is now in press. The first volume is on Ancient Civilization, the second on Mediæval and Modern Civilization, and the third will be on Contemporary Civilization. Regarding the material used, Professor James says in his introductory note: "In some particulars the work is not merely a translation. Phrases here and there not regarded as essential to an understanding of the text have been omitted. The tables of contents have been made more usable. An index has been added to each volume, and a general bibliography has been prepared for each period."

These volumes, which are especially reliable and concise, make a valuable and substantial addition to our text-books on history.

**Lincoln in the Telegraph Office,* by David Homer Bates. Illustrated. pp. 432. $2.00 net. The Century Co., 1907. New York.

***History of Ancient Civilization,* by Charles Seignobos. Translated and edited by Arthur H. Wilde, pp. xv, 373. $1.25 net. New York: Charles Scribner's Sons, 1906.

****History of Mediæval and Modern Civilization,* by Charles Seignobos. Translation edited by James A. James, pp. xi, 438. $1.25 net. New York: Charles Scribner's Sons, 1907.

EDITORIAL NOTES

BARROW AT CHAPEL CARN BREA, CORNWALL.—In August, 1907, a barrow at Chapel Carn Brea, Cornwall, was opened. It contained a cist built of flat-faced, irregular stones, with a capstone. A large urn, containing partly calcined bones, was found, as well as flint-flakes of older date than the urn. Above the cist at the north end a smaller urn was discovered.

ORIGIN OF THE GREEK TEMPLE.—Mr. P. Sarasin traces the origin of the Greek temple from a primitive house, raised on piles, such as is common in the Celebes. The periteros represents the outer row of piles, while the naos is formed by enclosing the inner row. The original dwelling has shrunk to the merely ornamental pediment and entablature. The triglyphs occupy the place of windows.

PLANS TO INVESTIGATE PRE-HISTORIC REMAINS IN WALES.—A committee composed of professors in various British universities has been formed for the purpose of thoroughly investigating Roman and pre-historic remains in Wales, in order to form a basis for writing a complete history of the Celtic people. Various tumuli and ancient fortifications in Wales will be the first subject attacked.

MODEL OF ROME DURING THE EMPIRE.—Professor Marcelliani has set up in his studio, near the entrance to the Roman Forum, a plaster model of the 5 central regions of Rome, as they were in the time of the emperors. No pains have been spared to make the model as historically accurate as possible. This will enable the visitor to gain an idea of the topography of ancient Rome more easily and completely than in any other way.

ANCIENT BURIALS NEAR BATH, ENGLAND.—During May and September, 1907, Mr. Gerald Grey and Mr. T. S. Bust discovered on Lansdown an old building, and near by 68 Roman coins, including one silver one of Julian, the Apostate. Two skeletons were found buried without coffins, but with the rock cut away to form rude sarcophagi. One of these was buried face down, with a stone over the head. A third was found in a perfect stone coffin, with a cover of stone, in two parts. In the building were found curiously shaped stones, which were moulds from metal castings.

ANCIENT REMAINS AT BROADSTAIRS, ENGLAND.—At Broadstairs, England, while excavating for a drainage shaft, a pit 12 ft. deep, 12 ft. long, and 4 ft. wide was found. The ends were slightly curved; the top was only 3 ft. below the surface. In the floor,

which appeared to be of burned clay, a much oxidized, iron spearhead, about a foot long, was found. Near by were bones of domestic animals and broken pottery. One bowl, 10 in. in diameter, has been partially restored. The type of pottery is rude. Some pieces are interesting because of the decoration of finger-nail design upon them.

FAKE ARCHÆOLOGY.—During the past few months the Wisconsin Archæological Society and the Detroit Museum of Art have been exposing the fraud of certain Detroit dealers in antiquities who have sold to collectors all over the country not only supposed Indian relics, but such things as the "Diary of Noah," and a drawing of the tower of Babel, found, it was said, in Michigan. Their method seems to have been something like this: Copper objects, clay pipes, etc., were made and then buried. After a sufficient length of time had elapsed for the earth to become packed down again, these relic hunters discovered them without much trouble, perhaps in the presence of uninitiated witnesses. This kind of archæology they have been carrying on for about 15 years. The two societies mentioned deserve the thanks of all interested in archæology for exposing this fraud and so putting all on guard against such impostors.

METHODS OF EMBALMING.—In a paper published in a recent report of the *Institut Egyptien,* Dr. G. Elliot Smith gives an interesting account of Egyptian methods of embalming as he has been able to reconstruct them from his extended study of mummies. The earliest method, that of 7,000 years ago, was a sun-drying process, which has preserved the bodies until the present. Later there were many changes. From the XVIII to the XX dynasties a new practise was initiated, that is, an attempt to restore to the shrunken limbs the form which had been lost during the early stages of embalming. This they tried to do by packing under the skin and in the cavities linen, sawdust, sand, and other materials. The brain and organs of the thorax, with the exception of the heart, were removed, cleansed, and dried. Then the collapsed body was packed. Mud was poured into the neck through the thorax, and wedged in with linen. In one case, which Doctor Smith noted, fine leather had been sewn to the healthy skin of a woman to hide some wounds. Artificial eyes were placed in the sockets; sometimes these were formed of linen, with black spots for pupils, and sometimes of onions. The dried viscera were wrapped in neat parcels, with the wax image of the prescribed god for each, and then returned to the body. As few incisions as possible were made. These were sometimes stitched up with a running thread. The aperture in the flank was covered with a wax or bronze plate, bearing the symbol of the sacred eye. The men were painted red and the women yellow. The eyebrows were tinted black.

PIT-DWELLINGS NEAR SADDLESCOMBE, ENGLAND.—Mr. Ernest Robinson, while excavating for flints, near Saddlescombe, England, discovered pre-historic pit-dwellings with clay hearths. The flints had evidently been removed from the land in the course of plowing, and thrown into the pits. Charcoal, ashes and clay hearths led to the conclusion that the pits were pre-historic dwellings. The only worked flints found were hammer-stones and an implement of kitchen-midden form, adapted for excavating. Accompanying these were half of a perforated granite hammer and fragments of coarse, hand-made pottery of the Bronze Age type. The pits faced east, probably for protection from the southwest winds. A Roman coin of A. D. 141 was found near by. Teeth and portions of a human skull, oyster-shells, and fragments of lathe-turned Romano-British pottery were also found. Many shells of land snails and mole bones, as well as bones of cattle and tusks of wild boars, were not far away. A peculiarity of these pit-dwellings is that the hearth was inside the pit, not outside. It is thought that the pit-dwellings belong to the Bronze Age and that the same sites were subsequently occupied by Romano-British tribes. Nearly all these pre-historic camping-grounds were confined to those portions of the hills capped by "clay with flints," possibly because of the presence of the clay for use in making pottery and for plastering the roofs made of boughs.

WEATHER WORDS OF POLYNESIA.—William Churchill, in a recent memoir of the American Anthropological Association, has collected the various "Weather Words" of the Polynesian Islanders, and from these has drawn a number of interesting conclusions. It seems that in Polynesia everything came from the sky and the "genealogy" of the "cosmic marriages" bears this out. The first seven generations are of special interest, and are as follows:

"Rock-gliding wedded Rock-sitting, begat Rock-erect.

"Rock-erect wedded Rock-in-earth, begat Glebe.

"Glebe wedded Wind-above, begat High-wind and Boisterous-wind, and Wind-smiting-lands and Gentle-wind and Dew-of-life.

"Dew-of-life wedded Cloud-clinging-to-the-sky, begat Flying-cloud.

"Flying-cloud wedded Vault-of-sky, begat Break-of-day, Morning-twilight, Dawn, Forenoon, High-noon, Westering-sun, and Glory-of-sunset.

"Gentle-wind wedded Scud-flying-in-the-void, begat Empty-sky.

"Empty-sky wedded Expanse-of-sky, begat Tangaloa-creator-of-families.

A study of the words meaning fire, heat, comfort, etc., indicate a migration from a colder climate, for in a region where the temperature seldom goes below 70° to warm, would scarcely mean to comfort unless the word had its origin in a land where fire was a comfort instead of a necessity, which they kept as far as possible from their habitations.

There is but one explanation possible. So far as the backward of the known Polynesian migration into these seas can be traced from their records upon our charts, we are led closer and closer to the equator, nearer and nearer to yet

greater warmth. But behind the warmth, in a track of migration wherein we have no sure tradition to guide us in orienting the early steps of the prehistoric fathers of this race, we are led unerringly to some land where the warmth of a fire gave them comfort, some land of keen and eager air, some land where the climate was far different from the climate of the heated islands on which we now find the race established. Whether the cold their ancestors knew was the frost of altitude, or low temperature of latitude, we perhaps may never have the data to determine. Percy Smith, from a keen examination of one of the old race names, Avaiki-te-Varinga, has pronounced them an ancient Gangetic people. This may well be the case, yet so long as warmth and comfort are the same word on Polynesian tongues, we may be pardoned for looking upon the sun-baked valley of India's holy river as but a halting place, not the home land. Along independent lines of research Tregear has been led to a cradle of the race in the spurs of the Hindu-Kush. That is a theory which will fit in well with this *mahana* revelation of the past, yet it may not accord so well with other lines of investigation. So far as concerns the present paper, we may rest upon the statement that any nursery of the first Polynesians in their distant and infant estate must be identified as a land whose temperature at times must fall so low that the heat of the fire must prove grateful to man, that the comfort of the chilled body must be so marked as to provide the name for the comfort of the soul. This must have been so marked by climatic contrast and continued over such a long period of time that the swarming race had of necessity to carry the idea and the words with them to the blazing equator and their new homes which dot the warm seas.

DEATH OF THEODORE F. WRIGHT.—We are pained to report the sudden death of Rev. Theodore F. Wright, Ph.D., the Honorary Secretary of the Palestine Exploration Fund for the United States, whose monthly notes on the progress of the work of that society have been so interesting and acceptable to our readers. Mr. Wright was on his way to Palestine, and had just left Alexandria. A telegram announced his death on November 13, 1907. After leaving Naples he realized that he was unequal to the journey up the Nile and to Palestine, and was anxious to get home. He expired a few hours after leaving Alexandria, on the return voyage. "He was so able, so zealous, and so kindly a representative of the Fund, that his loss seems almost irreparable. By his ability and tact the American support of the work of the Palestine Exploration Fund had greatly widened and increased, and he never spared himself in promoting an interest in its objects."

We hope in our next issue to give a fuller notice of his life and work.

Miss Mary A. Wright, sister of the late Honorary Secretary, of the same address, has kindly consented to act as Honorary Secretary in the United States of America for the present, and is so authorized by the committee.

RECORDS OF THE PAST

VOLUME VII MARCH-APRIL, 1908 PART II

Vol. VII

RECORDS OF THE PAST

Part II

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MARCH-APRIL, 1908

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THE NIOBID IN THE "BANCA COMMERCIALE" OF ROME

RECORDS OF THE PAST

VOL. VII

PART II

BI-MONTHLY

MARCH-APRIL, 1908

THE NIOBID IN THE "BANCA COMMERCIALE" OF ROME

HOWEVER great the number of works of art may be that are brought to light every year in the countries of Greek and Roman culture, it is seldom in comparison, that an antique object is found of very first-rate quality, that excites everywhere the greatest interest, that attains immediate success, being raised henceforth in the eyes of our artists as an inimitable standard and taking its place amongst the highly noted works familiar to every well-educated man. Although eager researches have been made within the last decades in the countries of classic culture by archæologists of various nations and notwithstanding that these researches have been partly crowned with success, nothing has been found for many years of so great an artistic value as the recently discovered figure of a Niobid in Rome.

It is not even to the excavations of scientific men that we owe the discovery of this new masterpiece, but purely and simply to chance. In the middle of Rome, on the very spot where once in ancient times the gardens of Sallust were to be seen, there is a piece of ground belonging to the Banca Commerciale Hali. While digging up the earth for a building here a spade struck the walls of a vault barely a few inches below the surface and there, under dust, bricks and other building materials, almost unhurt, was found the splendid statue of a young girl. According to the circumstances pertaining to the discovery, there is no doubt that this treasure was placed there in safety and pur-

posely immured in the troublous times of war. Later, when all was peaceful again, it was either forgotten, or it may be that even the careful owner himself was lost in the war without leaving behind him any knowledge of his secret. The statue lay there undisturbed and centuries passed until by some happy chance it was freed from the stuffy air of its protecting prison and brought to light again so as to fill, in the future, a place of honor amongst the classical works of art in Rome. Near the place where the figure was discovered, and where we suppose it to have stood, was the *Porta Salaria* through which Alaric entered Rome, 410 A. D., and Professor Lanziani's opinion, that the statue was at that time hidden away from the West-Goths, is probably correct.

The figure, made of finely-grained Grecian marble, represents a very youthful woman sinking to the earth deadly wounded by an arrow, which has pierced the back of her neck, who, sinking to the ground, grasps backward with both hands so as to remove the fatal weapon from the wound. The statue is, without doubt, that of a daughter of Niobe, who has to suffer death on account of her mother's crime. The movement forward, which is still to be seen in the prostrated figure, suggests flight, the right leg striding forward, even hurried flight. It is improbable that the girl knows from whence the fatal arrows come or who shot them; she only sees the effects of the arrows which have already slain some of her brothers and sisters, she forbodes her own ruin and seeks to evade her doom by rapid flight. Suddenly, in the middle of her flight, she too is pierced by the divine, invisible weapon and involuntarily grasps with both hands her wounded neck so as to remove the arrow. With her right hand she has seized the weapon, and presses unconsciously with her left her garment to the wound. This instinctive movement and the sudden uplifting of the right arm follow so quickly and with such violence that the drapery is loosened and torn away, thereby laying bare the upper part of the body as well as the left leg, which are thus presented so freely in all their sublime form to the eye of the observer.

That which distinguishes this figure from the great number of antique marble statues kept in the various museums of Rome is, above all, its exceedingly good state of preservation. Almost unhurt, it has risen up from its subterranean hiding place, and with the exception of a few chips here and there the right arm alone was broken, but could be easily restored without further difficulty. No corrosion caused by humidity or decomposition is to be seen on the smooth delicate surface of the fine-grained Parian marble, and the patina which is so often to be found on Greek works, giving them an infinite charm, goes a long way to complete the grace of this statue.

What strikes us most, is the lovely and dramatic conception and description of the event, the animated movement and the delicate rendering of the slender, youthful shape of the exquisitely perfect body.

The tragic event is expressed both in the suddenly interrupted flight and in the painful and desperately upturned look of the head

APOLLO IN THE THE GLYTOTHEK OF COPENHAGEN

thrown backwards. Although deadly wounded she tries to hurry on, the hope of still escaping her doom urges her forward, but her limbs refuse to act, her strength gives way, and, although the body is still held upright by its own vital power, in a few moments the slight but vigorous body will succumb and the last sigh escape those lips. It is a most impressive and touching sight to see such a youthful, promising life thus suddenly pass away.

On first hearing of the new discovery, everybody in Rome was so surprised, so struck, one might even say dazzled, by the extraordinary beauty of the statue that in the first excitement of the moment all idea of judgment was lost and all limits in the critical estimate and valuation of the statue were greatly surpassed. One was neither used, nor did one expect to find in Rome an original Greek work of art of first-rate quality, as is the figure of our Niobid. One counted so

NIOBID OF THE V CENTURY B. C., IN BANCA COMMERCIALE, ROME

little upon such an exceptional case, that it was taken into no consideration whatever and one did not even dare acknowledge the new statue as an original Greek work of the early classic period, and in consequence wished to recognize in it a copy made at the time of the Roman Empire. Gradually one began to see light again, to accustom himself to the extraordinary chance that had presented us with a gift of such rare value. One began to believe that he had to do, not with a laboriously

NIOBID IN THE GLYPTOTHEK OF COPENHAGEN

and cunningly executed work of the time of the Roman Empire, but with true Greek art of the best period, Attic style of the V century.

We do not know the name of the excellent artist out of whose workshop our masterpiece was produced, and may perhaps never know, but in any case he was an older contemporary of Phidias and by no means one of the least of them. The early classic writers do not tell us much about a reproduction of the story of Niobe dating from that period, but that this subject often attracted the Attic artists of that time and induced them to work on it is shown by the other statues of Niobids also dating from the same era, which are curiously supposed to have also been found in the gardens of Sallust. These are

the figures of the two Niobids in the Glyptothek at Copenhagen, the one of a flying girl and the other a prostrated youth. One considers both these figures, which are in many ways very similar to each other, as the work of the same artist, and supposed them, in addition to a figure of Apollo that is also to be seen in the Glyptothek at Copenhagen, to have originally belonged to one and the same group that stood in the pediment of an Athenian temple. In comparing these figures in Copenhagen with our Niobid in Rome, several scholars have wished to recognize in them a great likeness of style and execution, and would like to identify the newly-found figure with that same group of statues and attribute it to the same artist. On the other hand, I will not leave unmentioned that both the Niobids in Copenhagen, which I have often had occasion to examine, show great differences both in style and technical execution, and the Apollo bears an entirely different character—but it is not our task to examine whether the figures in Copenhagen belong together or not. As far as the newly-found Roman Niobid is concerned, there can be no question in my opinion, of a similarity of style with the above-mentioned 3 figures. In the *Burlington Magazine,* [1908, No. 1] the author of *Two Masterpieces of Greek Sculpture,* most decidely opposes this opinion when he says: "The disparity of date which we have to recognize between the development of the Copenhagen and the Roman Niobids is too considerable for the two works to have belonged to one group or to be the work of one artist." Also the statues in Copenhagen were found on the same spot as the new Niobid, but this does not prove or assure anything. If Sallust, or the owner of these gardens either before or after him possessed some original Greek works, representing the Niobids, and sought to complete the group, he had to take what was offered him, and it is improbable that what he collected can lay claim to having originally belonged together.

That the statue may have belonged to a pediment group is suggested to us by its composition, which is chiefly intended to be viewed from the front as well as the inequality in its treatment of the front and back parts. The back has not been left unfinished, such a thing was not customary with the artists of that period, and even if not intended to be seen was modeled and finished, if only from personal pleasure in their own work, but not with the same assiduous care and labor as can be seen, for instance, in the execution of the left hand of our figure, which is less carefully treated than the front parts of the body. The garment at the back is also far simpler in arrangement, one could even say more antique in style than in the front, where the flowing folds of the drapery show more freedom and animation.

The Roman Niobid, as well as the statues in Copenhagen, may possibly once have stood in the pediment of some temple, but they are so far apart in style that they could never have belonged to the same group, or even have come out of the same artist's workshop. The flying girl reminds us in her animated attitude, not quite true to life, of the

HEAD OF THE NIOBID IN THE GLYPTOTHEK
OF COPENHAGEN

Olympic sculptures; in the way she runs, of the archaic statues of Victory; in the severe head-dress and the drapery which hangs in heavy regular folds, of early Attic art. The action of moving in the Roman Niobid is far more animated, truer to life and freer, the conception and rendering of the youthful, graceful limbs finer and more delicate and more in accordance with later art. The head, so full of expression, temperament and youthful pride, is a work of rare beauty. The upturned imploring look, the softly-parted lips, through which gentle sighs of pain escape, are full of life and feeling, whereas the head of the figure in Copenhagen, observed in itself, gives us no idea of painful excitement or despairing agony.

The creation of the Niobids in Copenhagen dates between the creation of the Olympia and older Parthenon sculptures, the Roman Niobid is some decades younger.

RICHARD MAHLER.

Berlin, Germany.

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THE PIASA, FROM A SKETCH MADE BY H. LEWIS, PROBABLY ABOUT 1849

THE SIGNIFICANCE OF THE PIASA

ON THE Mississippi River, between Alton and the mouth of the Illinois River, a small stream, known as the Piasa Creek, empties into the Father of Waters. At its mouth, on a lofty, sandstone cliff, at a height of 80 ft. above the river, there were, in 1673, and until the middle of the last century, two carved and painted representations of a monster known to the Indians as the Piasa, or Piasau, the "man-devouring bird." It was a combination of bird and serpent.

Father Marquette, the first-known white man to descend the Mississippi to the Missouri, said of them, in 1673: "As we were descending the river we saw high rocks with hideous monsters painted upon them, and upon which the bravest Indian dared not look. They are as large as a calf,* with heads and horns like a goat; their eyes are red, beard like a tiger's, and face like a man's. Their bodies are covered with scales; their tails are so long that they pass over their heads and between their forelegs, under their bodies, ending like a fish's tail. They are painted red, green, and black. They are objects of Indian worship."

*Hon. P. A. Armstrong says that they were 12 ft. high and 30 in length, Marquette not taking into account the distance of his canoe from them.

Hennepin mentions several accounts of these objects. St. Cosme saw them in 1699, and Douay and Joutel also saw them.

Thus much for the early explorers.

INDIAN TRADITIONS

The Miamis, who say they once lived near the present site of Alton, say that two monsters, as described above, and "with wings of an eagle, only much larger, and claws of an alligator, lived in the caves of the Piasa bluffs. They spent the greater part of their time resting or dozing on the rocks or flying over the country. The voice of one was like the roaring of a buffalo bull; of the other, like the scream of a panther. They swooped down and carried off young deer and elk, which they bore to their cavern homes to devour at their leisure. They never molested the Indians until one morning, when the Miamis and Mestchegamis met in the Piasa canyon in battle array, when, in the midst of the carnage, the two horrible monsters came flying down the canyon uttering bellowings and shrieks, while the flapping of their wings roared out like so many thunder claps. Passing close over the heads of the combatants, each picked up a Miami chieftain and bore him aloft, leaving the tribe utterly demoralized and routed."

The Illini say that the "man-devouring bird" which took up its abode in the lofty peaks near Alton had wings clothed with thunder, making a most fearful noise in its heavy flight; its talons, four in number, were like the eagle's. It one day descended into their midst and carried off one of their bravest warriors, and thereafter, other braves, squaws, and pappooses. They lived in terror until their chieftain, Waw-to-go, obeying a dream he had had, offered himself as a sacrifice, and stood out in full view of the cliff to tempt the bird, which soon swooped down upon him, but was pierced to the heart by the arrows of twenty concealed warriors.

They had expected Waw-to-go would be slain, and in their joy at his miraculous escape, they cut the image of the bird on the rocks, and thereafter no Indian passed the spot without discharging his arrows at it.

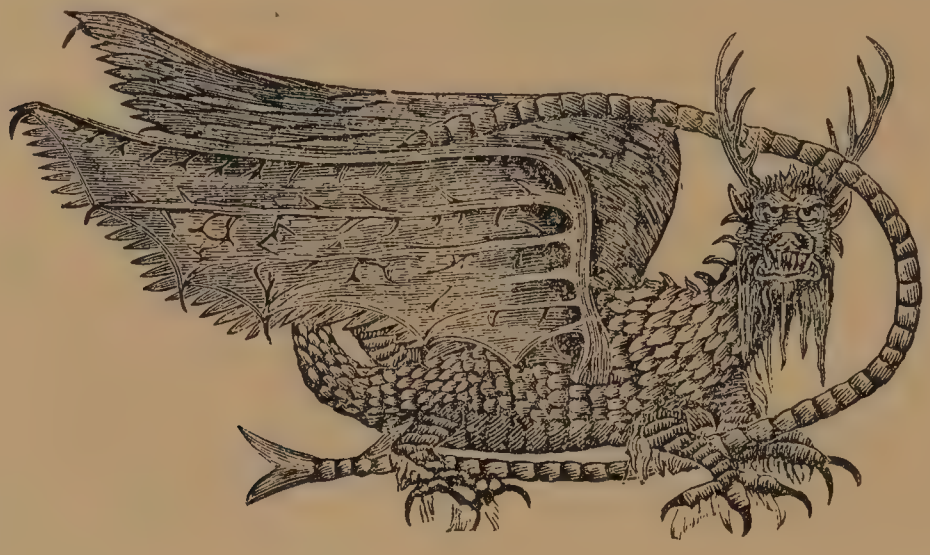
LATER TESTIMONY

When A. D. Jones visited the spot in June, 1838, there was but one image remaining, but he testifies that the Sacs and Foxes, passing down the river, went ashore and held a solemn council and war-dance at the base of the rock.

The archæologist, Wm. McAdams, of Alton, furnished the Smithsonian a picture of the petroglyph (used in this article), and also another less elaborate one, which shows a crevice as of a fracture in the rock, just behind the dim head of a second Piasa.

Prof. John Russell, of Jersey County, Illinois, in March, 1848, says that the marks of the bullets on the face of the cliff were almost

innumerable (for the Indians now had firearms). He explored the caves, the bottoms of which were covered with bones. And he adds this significant remark: "The Mississippi was rolling in silent grandeur beneath us; high over our head a single cedar hung its branches over the cliff, on the blasted top of which *was seated a bald eagle.*"



PEN-AND-INK SKETCH OF THE PIASA, BY WILLIAM DENNIS, IN 1825

[In addition to the foregoing:

Major Stoddard, in his *Sketches of Louisiana,* published in 1812, says: "What they call the Painted Monsters on the side of a high perpendicular rock, apparently inaccessible to man, known to moderns by the name of Piesa, still remain in good condition."

McAdams, in his *Records of Ancient Races,* refers to the picture shown above as "a pen and ink sketch made by Wm. Dennis, April 3, 1825."

John Russell, a graduate of Middlebury College, Vermont, 1817, settled in the vicinity of Shurtleff College, at Alton, Illinois, in 1828, and a few years later wrote the story or Indian legend of the "Piasau," and A. D. Jones, in his *Illinois and the West,* in 1838, relates the legend in substantially the same form. Neither of them, however, describes the figure in detail, nor do they state its location on the face of the cliff.

H. Lewis, who painted a panorama of the Mississippi River prior to 1849, also made the illustrations which appear in a rare German book—*Illustrirte Mississippithal*—by George B. Douglas, and published at Dusseldorf, about 1858. From this book, a copy of which is in the Library of Congress, we reproduce his picture of the bluff and the Piasau which is given at the beginning of this article. Whether this sketch was made by him prior to the destruction of the bluff between 1845 and 1847, when a stone quarry was opened at this spot, cannot now be ascertained, but it seems reasonable that, if not from actual observation, he surely would have made his sketch from description obtained by conversing with those who had been familiar with its appearance and location on the cliff. Comparing the various descriptions and references to this remarkable pictograph, which have been recorded covering a period of about 175 years, and noting the wide divergence in those several accounts which have been sufficiently minute in detail, we will scarcely be able to apply the verbal description to the pictorial illustration with that satisfaction which we might wish.

It is evident that McAdams failed to reconcile these differences in description when applied to the object as it appeared to him, since he endeavors to find a solution that would satisfy his own observation when he says "on certain days when the atmosphere was full of moisture, or after a very wet period, the figure on the rock could be seen much plainer." From this fact he was "satisfied that this atmospheric effect has been the cause, in part, of the differences in the descriptions of various observers. An old citizen, born and reared almost under the shadow of the bluff on which the picture of the Piasau was, tells me that sometimes you could see the wings and sometimes you couldn't."—Thomas Forsythe Nelson.]

Thus much for the existence of the Piasa petroglyph. But what of its significance?

Was this bird-serpent, with its half-human face, a combination of the thunder-bird and lightning-serpent, in which all the Algonkin tribes believed?

That all the Algonkin tribes did so believe, any one can assure himself by looking up the references to the thunder-bird, in *Jesuit Relations*. These are too numerous to be quoted here, but the early missionaries found the myth in all the tribes with which they came in contact, the Indians believing that the clouds were huge birds, because they soared through the sky, that the storm-cloud was a thunder-bird, which lived on serpents, sometimes picking them up from the earth, and sometimes spewing them out again so that they fell to the ground. One could see that the lightning was a serpent by the sinuous lines stamped on the trees which it encountered on its way down. Some of them said the thunder-bird was a man like a turkey-cock, who shot fiery arrows at his enemies.

Bancroft, Leland, Gatschett, Brinton, Dorsey, Chamberlain, and others all testify to the widespread belief in thunder-birds and lightning-serpents. Some of the tribes said the thunder-bird lived and hatched in the sky, and the young ones flew about squawking and restless, causing thunderstorms. Others said it had its nest on certain mountain peaks; others that thunder-birds' nests had been found on the plains and the young ones killed by hunters whom disaster speedily overtook. Some represent the lightning-serpent as issuing from the bird's eyes, some from its beak, some from its tail. The Passamaquoddy, of Maine, said that once an Indian was whirled up in a roaring wind, during a thunderstorm, and was set down in the village of the Thunderers, whom he found to be very like men, only they had wings. The crash of the thunder was the sound made by the flapping of their wings. The low rolling thunder was the sound of their ball playing. Sometimes, when the Thunder-boys are playing, they drop the ball; the Indians have picked up these fallen "thunder-bullets."

Near Big Stone Lake, in Dakota, are several round bowlders, which the Sisseton Sioux call the eggs of the thunder-bird. The Comanche know a place on the Upper Red River, where a thunder-bird once alighted on the ground, the place being identified by the grass being burned off over a space, having the outline of a bird with

outstretched wings. They tell of a hunter wounding a bird, and being afraid to attack it alone; he went for help, but, as the party approached, the thunder rolled and the lightning flashed out of the ravine, where the bird lay, and as they came still nearer the lightning blinded them so they could not see the bird, and a flash killed one of them. They fled back to camp in terror, for they knew then that it was the thunder-bird. (Eth. Rep't., XIV.)

The Haida, of Alaska, have a thunder-bird tattooed on each hand, the colors being red, blue, and black. They have a carving of it grasping a whale in its claws.

The Kwataka, or Man-eagle, of the Mokis, carved on the rocks, near Walpi, Ariz., closely resembles the Piasa of Illinois, having the same position, wings elevated (not extended), body covered with scales, or arrow-markings, head round, with feathers or horns on the top, legs with three talons, and in one claw it is grasping a serpent-like animal which it seems about to devour. Like the bird of the Illini, it was said to have lived in the sky and to have sorely troubled the people until a warrior shot it dead.

The writer has a carving of the thunder-bird, made by Klalis, a Kwakiutl Indian, from Vancouver, and this carving clearly represents an eagle. Klalis said that the thunder-bird used to live with his family on the peak of a mountain, near Puget Sound. It could become a man by pushing up its beak, which then became the visor of his cap.

Among the Ojibwas, Dakotas, Arapaho, and the Indians of Vancouver and Alaska, the eagle was taken as the representative of the thunder-bird, and observation of eagles, living in the crags, screaming, and swooping down to carry off animals and young children, probably lent details to the myth of the thunder-bird. And eagles, as we have seen, lived in Illinois.

The thunder-bird myth extends from the Atlantic to the Pacific, and from Behring's Straits to the Isthmus of Panama. There is a great Serpent Mound in Adams County, Ohio, many bird mounds in Wisconsin, and many thunder-bird mounds on the coast around Puget Sound. Mound-effigies, pictographs, petroglyphs, tattooes, and textile representations of the thunder-bird and lightning-serpent are found among the Micmacs, of Nova Scotia; the Ojibwas, of the Great Lakes; the Sioux, of Dakota; the Kwakiutl, of the Sound; the Central Eskimo, Tlinkets, and Haida, of Alaska; the Crees, of the Canadian Northwest; the Wichitas, Arapaho, and other tribes of the western plains; the Pueblos, of New Mexico and Arizona, and the Aztecs, of Mexico. The tribes of Illinois belonged to the same great Algonkin family as the Micmacs, Passimaquoddy, Ojibwas, and Sioux, and in all human probability the image with the face of a man, the wings and claws of an eagle, and the tail of a serpent, carved on the rocks at Alton, was the great thunder-bird or storm-spirit of the Illini.

Clara Kern Bayliss.

Macomb, Ill.

A BRITISH CHARIOT-BURIAL AT HUNMANBY, IN EAST YORKSHIRE*

IN May last [1907], during the process of excavating clay for brick-making in a pit close to Hunmanby station, a landslip occurred which exposed some articles of bronze. The writer was acquainted with the circumstance, and immediately went to Hunmanby, where, with the assistance of Mr. C. G. Danford, of Reighton, and of Mr. Parker, the owner of the pit, excavations were made, resulting in the discovery of a British chariot-burial.

From a geological point of view the exposure in the brick pit is of some interest, and consists of a section in the glacial series, at a height of about 300 ft. above the level of the sea. In the lower part of the pit is an exceedingly tough dark-coloured boulder clay or "till," crowded with far-travelled erratics, some (particularly the limestones of the Carboniferous period) being polished and striated. About 5 ft. of this deposit are exposed. Immediately above it are about 4 ft. of finely-laminated grey stoneless clay, evidently of lacustrine origin, excellent for brick-making. This is followed by 6 ft. of fine marly sand, mostly evenly bedded, and, at the top of the section, about 6 ft. of rough ferruginous gravel, which is fairly compact. As might be assumed from the nature and relative positions of the different strata, small landslips occasionally take place, the upper gravels sliding down on the clays beneath.

The objects exposed by the recent landslip were a bronze bridle-bit, and fragments of a thin bronze plate.

Attention was first paid to the slipped mass of gravel. This was carefully examined, and yielded the iron hoop of a chariot wheel, though it was in several fragments. The hoop is slightly over an inch in width, but on account of its oxidised state it is not possible to ascertain the exact original thickness of the iron. The rim appears to have been turned inwards on each side. Sand and small pebbles have adhered to the tyre. From the specimens obtained the diameter of the wheel was calculated to have been nearly 3 ft. Portions of the iron hoops for the naves were also secured. These appeared to be of thicker material, and, if complete, would be 6 or 7 in. across. Obvious traces of wood were found adhering to the iron of both the large and small hoops, but nothing was present to indicate how many spokes existed, nor, indeed, was there evidence of spokes at all. One or two curved pieces of iron were also found.

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*Reprinted with additional illustrations from *The Yorkshire Arœological Journal* [England], Part 76, 1907.

After being satisfied that there were no further relics amongst the slipped material, attention was devoted to the grave, which was well shown in section at the top of the pit, the disturbed portion being readily distinguished from the naturally bedded gravel at its sides, particularly as a thin layer or "pan" of iron lined the grave. This "pan" owes its existence to the disintegration of iron, of which metal quite a large quantity must have occurred amongst the objects interred.

The burial was situated under a slight mound, or tumulus, now almost levelled as a result of agricultural operations, though some of the workmen remembered it when it was much more conspicuous than it is to-day. The grave was basin-shaped, and the sides curved inwards. It was 11 ft. 6 in. across the top, and 3 ft. 6 in. deep (measured from the original land level) in the middle. The floor of the excavation was not horizontal, but was 5 or 6 in. deeper at one end than at the other. The infilling consisted largely of sand, with occasional sandstone, etc., pebbles. This material, partly from the quantity of iron it contained, and partly no doubt from the decayed organic material, was exceedingly compact and difficult to work. Towards the bottom of the grave was a quantity of greyish material, with the peculiar "greasy" feeling so characteristic in places of this nature.

On carefully examining the section, it was seen that traces of bronze occurred. Some of this material was in very thin plates, and too far decayed to bear touching, and some was in the form of a beading or tube cut horizontally, about a quarter of an inch wide. After several hours' work it was seen that lying on the bottom of the grave was a large shield of wood, apparently oak, ornamented on the upper surface with exceedingly thin plates of bronze, and with a border formed of more substantial material—a strip of bronze, about one-sixteenth of an inch in thickness, and three-quarters of an inch in width. This had been carefully hammered over into a U-section, into which the edge of the wood shield was clearly fitted. This bronze strip was fastened to the wood by means of small bronze rivets, about a quarter of an inch long, exactly the thickness and shape of an ordinary household pin-head. Unfortunately the greater portion of this shield had fallen with the landslip, and with the exception of a few pieces of bronze, forming the border, not any of it was recovered; nor is this to be wondered at, as even in that portion examined in position both the wood and the thin ornamental plates were so fragile and decayed that they would not bear touching. As much as could be possibly moved was taken away, though this was only accomplished by also removing the soil upon which it rested. The portion of the shield remaining was nearly two feet long, almost straight-sided, except towards the ends, where the edges curved round, from which it would appear that the complete shield was straight-sided, with rounded ends, and quite likely resembled in shape the well-known enamelled bronze shield from the Thames at Battersea, figured as frontispiece to the

GENERAL VIEW OF THE LOCALITY AND CUT WHERE CHARIOT-BURIAL WAS FOUND IN EAST YORKSHIRE

recently-issued *Guide to the Antiquities of the Early Iron Age* in the British Museum. The Battersea shield, which is of the same period as that of Hunmanby, is about 30 in. long and 13 in. wide. At Hunmanby, however, it was obvious that the whole of the shield had not been covered with bronze, but was ornamented with thin plates, riveted on to the wood. Where the bronze had not entirely disappeared it was seen to be ornamented with the scroll-work in repoussé, so characteristic of the late Celtic period. Small pieces of this remained, and were carefully removed, whilst in other places the rivets alone indicated where the bronze covering had been.

Across one end of the shield were the remains of a flattened tube of thin bronze, of which little more than the cast remained—the metal having almost entirely disappeared. This was traced for about 6 in. and may have been the remains of the thin end of a bronze scabbard, or of a spear—most probably the latter, as no other signs of a sword were visible.

Near the edge of the shield, and a few inches above it, were two curved pieces of iron of doubtful use—possibly part of the chariot—as well as various other pieces of that metal. Amongst the latter were two rivet-like pieces of iron (*i.e.* small bars with "heads" at the ends) with the wood still adhering to the sides, evidently used in connection with the construction of the chariot. These and many other evidences of the vehicle itself having been buried are of im-

portance, as according to some authorities a "chariot-burial" sometimes means that only the wheels and horse-trappings were buried with the warrior.

As might be expected from the nature of the subsoil, bones were very few indeed. Immediately below the tyre of the wheel presently to be described, however, were a fragment of bone and parts of two teeth of a horse, in an advanced state of decay, but apparently good evidence of the animal having been buried with the chariot.

Perhaps one of the most interesting finds, however, was the iron tyre of the second wheel, the upper portion of which was found in position about a foot from the bottom of the grave. It was soon found that the wheel had collapsed, the lower portion being flattened out on the bottom of the excavation. The position of the iron demonstrated that the wheel, and presumably the chariot also, had been buried in its normal standing position, and that as the wood decayed the tyre gradually subsided under the weight of the earth above. Had the wheels alone been buried, even in a standing position, the soil would gradually have taken the place of the decaying wood, and the tyre would have been found complete. Between the two crushed portions of this iron rim were found the remains of the smaller ring of iron which surrounded the nave of the wheel.

The bridle-bit of bronze[1] found in the first instance is very similar in type to the specimen from Arras, now in the York Museum, which is figured and described by the Rev. Edward William Stillingfleet, in the *Account of the Opening of Some Barrows on the Wolds of Yorkshire.*[2] The Hunmanby bridle-bit, however, is rather larger, and is more delicate in design. The two rings forming the bit are made of bronze, they are 2⅞ in. in diameter, and the ∞-shaped piece is 2½ in. in length.

There is also a thin lenticular piece of plain bronze, measuring about 3 in. by 2½ in., which is polished on the convex side. At its edge there still remains a rivet, in position, from which it would appear that it has been fastened to something. The use of this is doubtful; it is possibly a portion of a bronze hand-mirror, metal mirrors having been found with chariot-burials of this period elsewhere. The precise original position of this object cannot be ascertained, as, together with many smaller fragments, it was found in the slipped earth. From the same material also a portion of a large bronze ring was secured. This at first was thought to be part of a second bit (as bits generally occur in pairs in chariot-burials), but from the way it thickens towards its

[1] In Canon Greenwell's paper on *Early Iron Age Burials in Yorkshire,* just issued (*Archæologia,* vol. lx., pp. 251-322), a postscript is added relating to the Hunmanby burial. In this, referring to the bridle-bit, Canon Greenwell writes: "It is stated to be made of bronze, but is, no doubt, like many others which have occurred elsewhere, of iron, bronze-coated." In this, however, Canon Greenwell is mistaken. The Hunmanby bridle-bit is broken in more than one place, and unquestionably is bronze to the core.

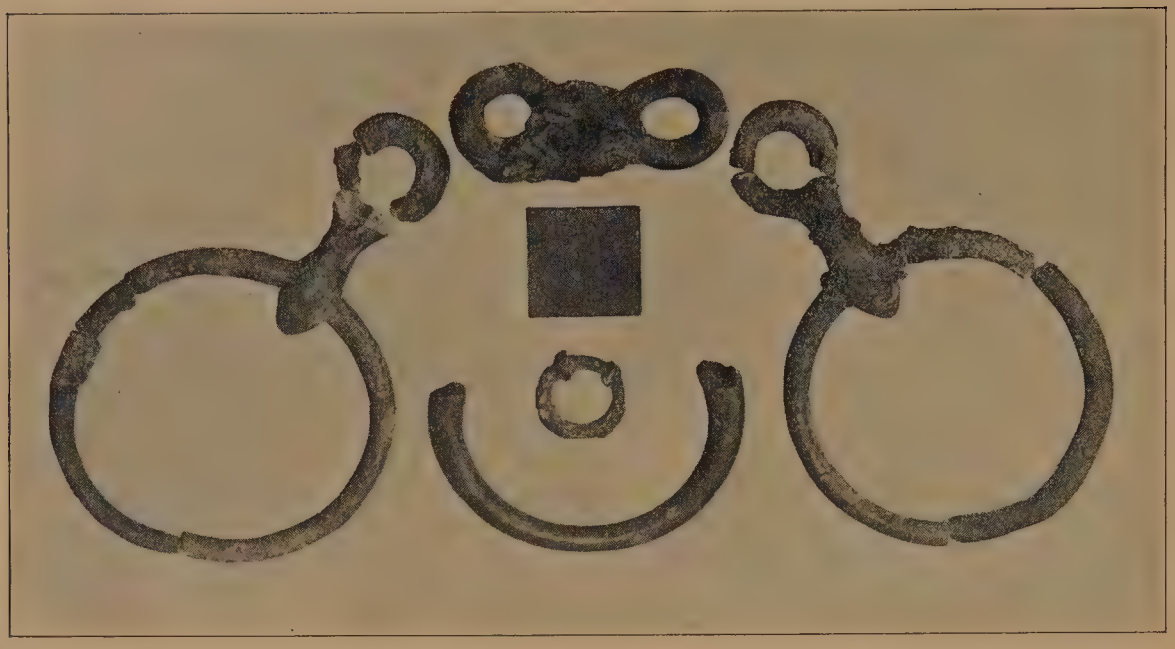
[2] *Memoirs illustrative of the History and Antiquities of the City and County of York* (*Proceedings of the Archæological Institute* (York vol.), 1846, pp. 26-40). The figures there given are reproduced in Canon Greenwell's paper just referred to, and in the recently issued Victoria History of Yorkshire, vol i.

broken extremities it has evidently been for some other purpose. Where broken there are traces of iron, which have the appearance of being part of something to which the ring was attached. A smaller ring of bronze thickened in two places, was found in the grave near the tyre. It is probably part of the harness, and somewhat resembles the bronze ring attached to the upper part of the linch-pin, shown in Fig. 2 of Plate 4 of Stillingfleet's paper, and also reproduced by Canon Greenwell in *Archaeologia,* vol. lx., fig. 40, p. 40.

With regard to the age of the Hunmanby chariot-burial, it seems probable that it dates from the II or I century B. C. The early geographer, Ptolemy, records that there was in his time in this district a

NEAR VIEW OF THE CUT WHERE CHARIOT-BURIAL WAS DISCOVERED IN EAST YORKSHIRE

tribe of the Parisi, presumably a branch of the Parisii on the Seine, who have left their name in the city of Paris. The ancient tribe of the Brigantes also occupied East Yorkshire in pre-Roman times, but which was in occupation first, or whether both lived in the area as "neighbours," is not known. It is known, however, that in certain small tumuli of the early Iron Age, which exist in East Yorkshire (and in these alone), chariot remains and horse trappings have been found buried with the dead. Of these chariots and the havoc they wrought there is abundant evidence in the early Roman records. And it is of some moment to bear in mind that East Yorkshire—the land of the Parisi and Brigantes—has yielded such positive proof of the former existence of these early methods of warfare.



BRIDLE-BIT, ETC., FROM THE CHARIOT-BURIAL AT HUNMANBY, EAST YORKSHIRE, ENGLAND

When it is remembered that Canon Greenwell, Mr. Mortimer, and others have opened somewhere about 700 early British burial mounds in East Yorkshire, and that out of that enormous number only about half-a-dozen chariot-burials were met with, the importance of the present discovery at Hunmanby will be appreciated.

It may here not be without interest to briefly refer to the previous records of a similar kind.

Canon Greenwell, in his *British Barrows* (1877, p. 454), describes 3 chariot-burials found near Market Weighton. In one barrow were the iron tyres of two wheels, about 2 ft. 8 in. in diameter. The naves, of wood, were 5⅛ in. in diameter. There were two snaffle-bits of bronze, some rings, and a circular mirror of iron, with a bronze plating fastened to the iron by small rivets. In two other instances (one at Arras and one at Hessleskew) the wheels only appear to have been buried. With one of them was also a mirror, and accompanying the other was a shield with a bronze boss and an iron rim. In 1875 Canon Greenwell opened a small barrow at Beverley in which "two wheels of the chariot and what is almost certainly an iron bit were the only articles discovered."

In his recently published *Forty Years' Researches in British and Saxon Burial Mounds of East Yorkshire,* Mr. Mortimer gives a summary of what is known of Yorkshire chariot-burials. In addition to those referred to above, mention is made of the remains of a "horse and cart" found in a gravel pit at Seamer. The hoops of the wheels were rusted and broken, and all the wood had disappeared. A workman carried the bones and iron away and sold them. It was not until the close of his work amongst the East Yorkshire Barrows that Mr. Mortimer was fortunate enough to meet with a chariot-burial himself.

In 1897, in opening one of the so-called Dane's graves near Driffield, he found the hoops of the wheels and naves of a chariot, and rings of bronze and iron belonging to the horse-trappings. Reference is also made to two other probable finds—one was at Huggate, when the tyres of two small wheels were carted away, with many bones, whilst levelling a barrow; the other was in 1888, during the construction of the Driffield and Market Weighton Railway. In filling a wagon from a cutting near Enthorpe, a lot of bones and rusted iron were observed. A pin or bolt, of bronze and iron, was picked out, and is figured by Mr. Mortimer. This is undoubtedly one of the articles known as "linch-pins," similar to those found in the Arras, etc., chariot-burials.

THOMAS SHEPPARD.

Hull Museum, England.

MOUNDS OF NORTHWESTERN ILLINOIS

THE PORTAGE GROUP

THIS large group of tumuli is located on the land of Mr. John Hess, near Portage Station, 3 miles southwest of Galena. It occupies the summits of two ridges separated by the Portage, or main ravine, a long, dry run, and consists of 39 mounds, 26 of which are conical and the remaining 13 elongate or wall-like. All of the latter class are located on the eastern ridge, so that here at least we have a fairly well defined area, given over to each class of tumuli, a feature which lent to this group uncommon interest.

At some other points mounds of both kinds are found more or less intermingled, and yet it is worth observing that there is not an instance, within the territory covered, where mounds of the larger conical structure, such as the Dunleith group, the Portage group, the Kroft group at Hanover, "Lost Mound," and the Fisher group, are associated with the wall-like type.

The twin ridges at Portage form hill summits, nearly isolated, connected with the mainland to the north only by narrow "necks." There is no evidence of defensive works on these necks, nor are there any fortified points within the district so far as known.

The Galena River sweeps along the east base of the eastern ridge, and Harris' Slough washes the western base of the western ridge.

THE CONICAL MOUNDS

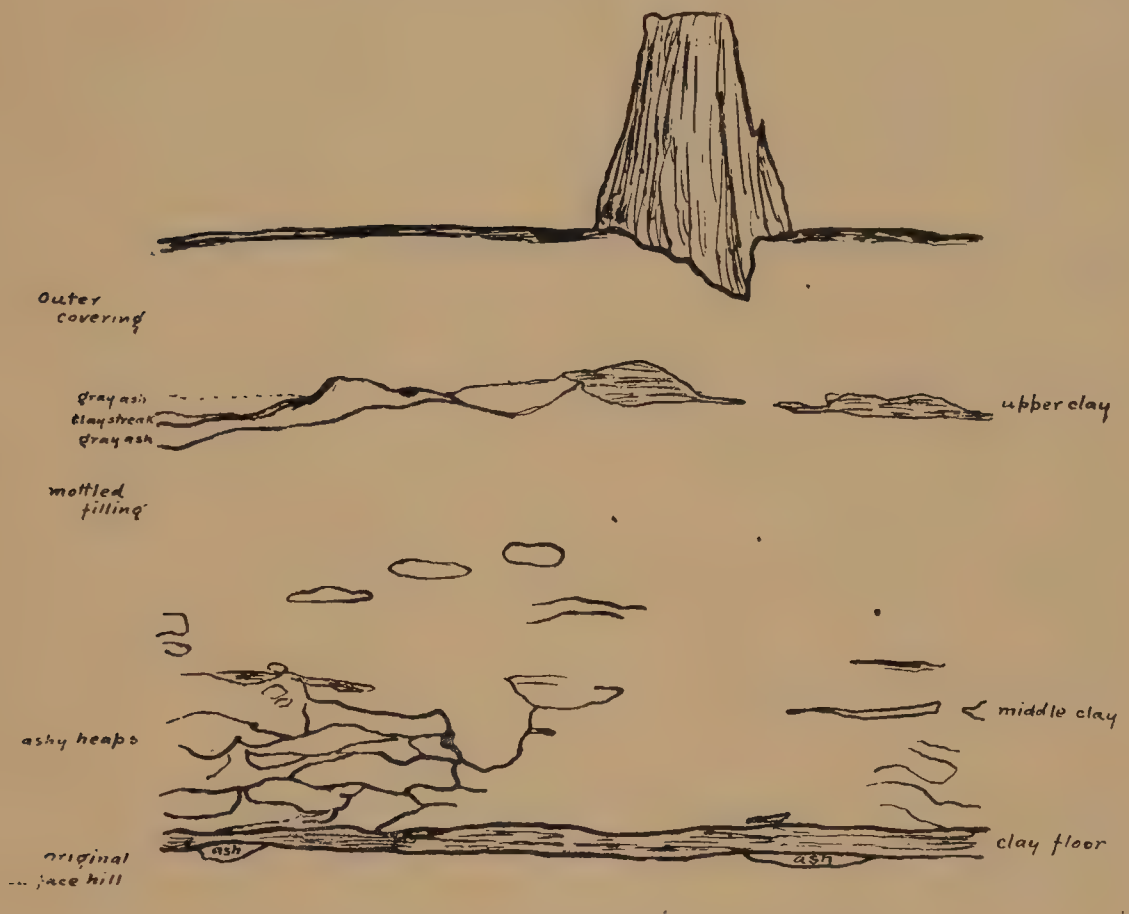
[Mound No. 16]

Of these mounds No. 16 earliest attracted attention because of its larger size and its somewhat central position in the group. In May, 1895, it was photographed, showing the large, white-oak stump upon its summit, and permission was gained from Mr. Hess, the owner of the property, for an examination of the structure. Work was started at the south base, and a cut 11 ft. 3 in. in width pushed through to the center, with one lateral trench 3 ft. wide on the left, at the southwest base. A corresponding cut from the north base, with a lateral trench and cuttings on the northwest was made later, and it was intended to remove the east and west portions in a similar manner, but the work remains incomplete. The mound had been opened years before, about 1878, by a trench from the north, but the exterior appearance at the center was not such as to indicate that much damage had resulted, and it seemed also that an examination of the structural detail would repay the outlay of labor necessary.

The results of the examination, while far from satisfactory, are yet suggestive to the student of the beginnings of an autochthonous architecture, aside from their value in comparative study, and if they shall serve as an incentive to others to examine other similarly desecrated tumuli, now fast passing into utter ruin, we may yet secure most gratifying results from their study, even though others who preceded us have reaped what should be the full rewards of our labors.

The work of excavation followed a definite plan, and the results were platted and drawn to scale. Everything relative to the structures, whether at the time of interest or not, was noted, and in this way peculiarities of structure not understood in the field were later worked out. Sketches of the front and side walls were made at intervals of 15 inches, and a base level marked on the side walls and carried through the structure, insured the absolute accuracy of these sketches. The old opening was cleared of the fallen earth, and the base of the mound thus restored to the condition in which it was left by these older investigators, enabling us to see the extent to which their excavation had penetrated. They had evidently removed the primary burials and partly destroyed a log vault in which they were placed.

Referring now to a chart and sketches of the mound, we found beneath the structure a portion of the original hill-top undisturbed, 40 ft. in diameter, retaining its original slight dip toward the south. There are a few burnt spots to be described later, and the rectangular depression for the mortuary chamber and sills, but otherwise we have here a well-preserved fragment of the ancient hill surface, as it existed before the erection of the mound. Our trenches cut through sections of what would probably prove to be a circular trench, within



CONICAL MOUND 16, AT PORTAGE, ILL.

the mound structure, encircling this undisturbed area, a feature of much interest, which should be worked out in full. Similar buried trenches are familiar to English archæologists, having been found in many of the ancient tumuli of England.

Yellow clay, presumably from the bottom of this trench, was worked into a clay floor over a portion of the circular area. The earth above the clay in the trench seems to have been stripped and piled along the inner edge. The floor is rather rectangular than circular, evidently with rounded corners, and the vault was placed northwest of the center of this. The orientation is not precisely accurate, the longer axis of both the vault and mound, and probably of the clay floor, being 30° west of north, but there is probably no other design in this than in a general conformation to the valley and ridge, which seems to have been the dominant idea with these people in locating their structures.

The sides of the mound were covered with a deep coating of gray ash, and while this* was building some liquid, together with liquid clay from the mass of yellow clay near the summit, ran down the slope

*See Stevens "Flint Chips," p. 383.

on all sides in thin sheets, underneath and through the ash, discoloring it and extending down into the buried trench, which the mingled ash and clay filled in irregular sheets, forming a concrete-like mass. Here we see the inner edge of the buried trench, over which the ash and liquid clay have poured, and all of the sectional elevations show the streaks of this liquid through the ash. The ash, when dry, is nearly white in color and very porous, and filled with cylindrical root casts, precisely as in a natural soil, an undeniable evidence of age.

The surface of the fused clay and earth around the central vault was more or less covered with the decayed wood or bark used in roofing the vault. Even the traces of the poles, which supported the roof can be made out, and the grain shows the direction in which the boards, poles, or bark was laid. The western corner of the vault shows the holes where the roof poles entered and the middle clay contains decayed wood and lime, which occurs here in scattered pieces and in large patches. Some, if not all, of this lime results from the decomposition of clam shells, for fragments of crumbling shell, still retaining their luster, were imbedded in the "middle clay."

The roof of the vault had fallen, precipitating the debris and the superimposed deposits, as the various sketches indicate, and causing great vertical fissures in the body of the structure, dislocating to some extent all of the central deposits above, and later, when opened by the local explorers, of 1878, large portions of the weakened structure split off and fell into their abandoned excavation.

The source of much of the lime or decomposed shell in the vault seems to be from beneath the ends of this decayed wood of the roof, but what purpose, if any, may have been served by these shells is altogether conjectural. Frequently the massed lime will contain within it a line or lens of earth, as if resulting from the decomposition of both valves of a unio shell. Sometimes there were some of the black, velvety patches upon this middle clay, and at one point, where the imprint showed the clay had been forced up between two poles, while wet, leaving a cast of the bark, there was the imprint of grass.

The bulk of the mound above the middle clay is composed of earth similar to that of the heaps below, except that the separate deposits are less distinct, producing in the vertical section a mottled appearance, quite different from that of the lower earths. This material fills out nearly to the inner edge of the trench, and attains, near the center, an elevation of 6 ft. above the clay floor.

The upper southeast central part of this earth and a heavy deposit of raw, yellow clay above it, contained a large quantity of very much decayed or calcined human bones in great disorder. Neither the earth nor the clay are burnt, however, nor is there any definite ash-bed or embers other than a deep white ash, coating the sides of the mound, so that the incineration seems to have occurred elsewhere.

Probably all of these upper burials are the gathered remains from mortuary scaffolds or graves, and incinerary pyres, representing the accumulations of a period, and although so badly broken they were of great interest, and many of them were gathered and preserved for future study.

The bones were those of subjects ranging from infancy to old age, and there was, consequently, much contrast shown in physical structure. Some indicated by their massiveness great strength, but none were of any extraordinary size, nor had they other peculiarities than an occasional humerus, with a perforation of the olecranon fossa, so far as could be ascertained by examination in the field.

On one inferior maxillary it was noticed that the two left incisors were not separate teeth, but firmly attached, one to the other, and the teeth protruded very much. Some of the bones are very small and slender, considering the apparent age of the subject, but doubtless these are parts of female skeletons.

In the ancient hill level, near the edge of the clay floor, and in the upper earth of the mound near some of the human bones was a round, green-coated stone, yellow within, and broken on one side. Near this was a piece of flint and a bit of chert.

We have now followed patiently the details of this structure so far as exposed—details more tedious in the telling, by far, than in the working out.

I have tried to locate approximately from the evidence gathered how long ago we should look for the completion of this mound. The actual and visible evidence of the white-oak stump on its summit carries us back to about the year 1650, but the filled-in root cavities, which penetrate all portions of the structure doubtless antedate this by hundreds of years.

The rotted condition of the timbers of the mortuary chamber, buried as they were far below the reach of frost and air, point to a remote antiquity. There is no doubt of this if one is prepared to admit the comparative value of evidence gathered in European research. The evidence of the buried ancient hill surface, beneath the clay floor, throws no certain light upon the question of comparative antiquity. The depth of the leaf mould is scarcely an inch, while that of the laminated top-soil on the level surrounding the mound at present is about 4 in. There is also the question of the source of the earth for the erection of the structure to be considered.

If the earth used in the erection of this mound was taken from the immediate hill surface, then we must consider the soil now covering that surface, at least in part, to be the slow accumulation of the years that have passed since its erection. There is no direct external evidence as to the source of the earth used in the construction, and we can judge only by an examination of the structure.

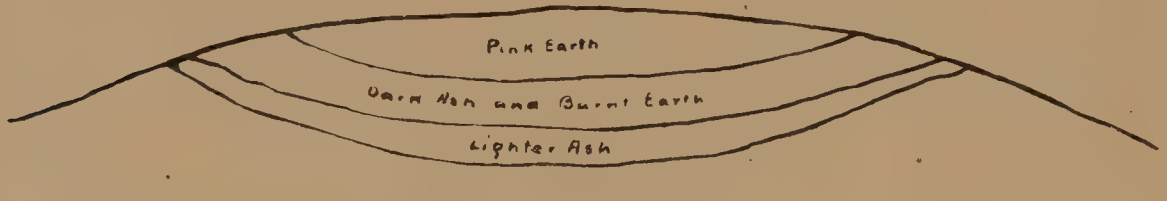
MOUND 7

Mound 7 was rather thoroughly examined in the summer of 1899 for the purpose of comparative study, and was of such interest, purely as a structural study, that it seems best to give it considerable space here. Its resembance to one of the mounds of the McDonald group, to be mentioned later, and also to some features at Mounds 5 and 16, of the present group, are of interest.

Mound 7 is the initial mound on the south of the series of larger tumuli, which crown the summit of the western ridge at Portage. There are two sub-groups of 4 and 2, respectively, on the southeast, on a lower portion of the ridge, but from Mound 7 extends a chain northwest, somewhat evenly spaced, to the end of the ridge.

The mound had been opened years before by a narrow trench from the south, but was little injured, although the central ash-bed was penetrated. For comparative study it was reopened during the summer of 1899, by a trench from the west, and encountering material of much interest the excavation was extended on all sides, through 4 three-foot sections in the central part.

No entirely satisfactory theory can be adduced to explain the mode of construction as found in the mound, but the chart and sketches of section elevations show very well what was found, and in some respects it is similar to Mound No. 1, later opened at McDonald's.



SECTION 6, MOUND NO. 7

There seems to have been originally a simple conical mound here, of yellow clay and ash, similar to Mound 5 of this group, and to No. 4, at McDonald's. This structure then seems to have been altered by creating, at the center, an oblong, saucer-shaped hollow, the major axis of which extended northwest to southeast, or parallel to the ridge and valley. This excavation extended down nearly to the bottom of the original structure, and its limit is, in places, well marked. The hollow thus formed contained a bed of ashes of irregular thickness, in which were calcined human bones, fragments of a pot, a flint point, lumps of burnt earth of various colors, and occasional burnt stones. The ashy material extended out to the under side of the sod on the northwest and southeast, and in the hollow above was a pinkish, ashy earth, filling the remainder of the hollow, and forming the summit of the structure. The structure, therefore, as seen in

section northwest to southeast lies in a saucer-shaped stratum, bearing some resemblance to an Altar mound.

Beneath the ash-bed, near the center, in the brown ash and raw clay, or hardpan, were 4 frgamentary, small bones, apparently of the arm, and a long bone, untouched by fire, while just above in the ash-bed were fragments of a calcined femur, and from here northwest, for several feet, were similar fragments, for the most part burnt to an ebony black, but sometimes white. The unburnt bones were removed carefully, the 4 arm bones enveloped in the stiff clay matrix in which they lay, as they were too badly decayed to remove otherwise. Moistened earth or clay seems to have been applied above the burnt bones during the burning process, as many of the baked earth fragments retain casts of the bones on their blackened surface. These are blackened part way through, and the upper surface burnt to a red, yellow, or blue color. The whole mass of the bed appeared to have been subsequently broken up and stirred about, mixing the burnt clay and bones indiscriminately together. Many of the burnt clay lumps were retained, and other bits of raw clay are of interest, as bearing marks of the instrument used by these people in excavating the mortuary hollow. South of the unburnt bones, but in the ash of the ash-bed, was, perhaps, the greater part of a crushed pot. This was removed in the mass as found, and, therefore, was not examined before sending to the museum, but it appeared to have been bowl-shaped, slightly constricted at the neck, with a half-flaring lip. The material is a blackish paste, tempered with crushed quartz or chert, and burnt to a light red. The ornamentation consists of fingernail imprints applied to the exterior, in a series of horizontal marks, arranged at intervals of less than half an inch in vertical columns and separated one from another by a space of an inch or a little less. The interior surface is decorated where the lip turns outward, merely by a double series of the same imprints carried horizontally around. Pieces of the pot were scattered in the ash for a space on all sides and all were very fragile, crumbling readily.

Calcined fragments of crania were found at three points. These are parts of two, or possibly three skulls, north and northwest of the pot. At the north corner of the ash-bed, the skull fragments are those of a child. The fragments are, in many cases, curiously warped by the great heat to which they were subjected. Parts of this skull were widely scattered, but we have succeeded in identifying fragments of frontal and other parts of skull cap, of inferior maxillary, and of a temporal bone.

Near the skull was a little round ball of raw clay. There were also fragments of an adult skull and fragments of a remarkably thick, narrow, and low adult frontal.

From S. W. to N. E., across sections 1 and 3, extended fragments of two charred logs, one, apparently of black oak, being the outer log. These lay at the top of one side of the incinerary hollow,

and on another side two similar timbers extended at a right angle, suggesting the corner of some rectangular structure of wood, but they, perhaps, are merely embers from the fire, tossed aside at the close of the ceremony.

THE ELONGATE OR WALL-LIKE MOUNDS

The elongate mounds at Portage are found only along the crest of the eastern ridge, which extends in a generally north and south direction, the Portage ravine lying on the west and the Galena River sweeping along the eastern base.

The elevation of this ridge is a little less than that of the western ridge, or from 105 to 130 ft. At the northern end and near the central part it rises some 15 ft. above the general level, and further south it is some lower and somewhat detached.

There are 13 of the long mounds, 11 of which are on the higher part of the ridge and are well preserved, and two, not so well preserved, are on the lower part with 4 small, ill-defined conical mounds. They extend in a nearly continuous embankment of earth all along the summit and vary very little in size. They are not always constructed on a level surface, but conform more or less to the natural slope of the locality.

It is, perhaps, merely an accident that the number of conical mounds in the Portage group is exactly twice the number of the long mounds, but it is peculiar, and it is a suggestive fact also that, as previously stated, all of the conical mounds, with the exception of the 4 small, ill-defined ones, lie on the other ridge.

With the continued good will of the owner of the property, Mr. John Hess, 5 of these mounds were examined, Nos. 23, 24, 25, 26, and 27, and substantially the same method of construction and interment found in all, although there were variations in minor details. They were divided for excavation transversely in sections 3 ft. wide, and thoroughly examined from end to end, and the following abstract of a report of the exploration at Mound 24 is presented as typical of all, supplemented by such special features as constituted variations in the type.

MOUND 24

Mound 24 lay on a surface sloping slightly to the southwest, between a smaller mound on the south, No. 23, and one of about the same size north, No. 25. The sections in this mound were subdivided into blocks, for the sake of greater accuracy in designating finds on the chart, a precaution which the paucity of the finds rendered unnecessary in later work.

The mound extended 71 ft. 10 in. N. N. W. to S. S. E., conforming to the trend of the ridge at that point, and had an average width

20 ft. at its base. Conforming to the surface slope of the hill its southern end was 1 ft. 4 in. lower than the northern end, and the central part, spanning the head of a small lateral ravine, was correspondingly depressed a few inches. The bulk or mass of the structure remained about the same throughout, about 2 ft. high, except at the northern end, where it gradually flattened out, so as to retain a symmetrical relation to the lower end.

In the whole mass of earth there was but one burial, and that consisted of but portions of one skeleton, lying in an ashy layer or bed, which had extended, almost barren of interest, through the structure, longitudinally for 31 ft.

Work had progressed 4 ft. beyond the center of the mound, and we were getting discouraged. There were no indications of a burial, and we had in mind the failure of the Bureau of Ethnology to find burials in this type of mound. Suddenly the mattock struck a skull, and we knew that we had opened a new chapter in the achæology of the district.

The burial was, however, well marked, had we known it, for it was bounded by a nearly square piece of limestone, nearly in contact with the skull, 3 by 3 by 4½ in., on the E. S. E., and by a "foot stone," 7 by 4 by ½ in., 3 ft. N. N. W. from that. The latter stone was set on edge in the ash and clay.

The skull lay near the top of the ash-bed, at a depth of 1 ft. 9 in. The position was upside down with the face toward the southwest and resting on the left frontal and parietal. Both superior and inferior maxillary were absent, and the mattock stroke injured slightly the right temporal. The right molar was also missing. The skull was filled solidly with earth, but was not crushed and seemed to be a fine, normal, well-shaped skull, but perhaps rather small.

The bones in the north wall were portions of the skeleton in much apparent disorder. They comprise parts of a tibia and of a femur. Under the femur was part of a badly decayed pelvis and other fragments of nearly decomposed bone, perhaps all forming originally a bundle from which the skull had rolled and overturned. A few inches east of the bones was a small piece of common stone.

All of the bones were of slight build and seem to have been more or less injured when interred. To the right of the burial, but just beneath the top-soil lay a nearly rectangular piece of limestone, 1 ft. 4 in. long, and 4 in. square. The north end lay 5 in. beneath the surface and the south end but 2½ in. It was tilted up slightly, and corner-wise. The southern is diagonally, and the northern end roughly, square, with a small piece detached and earth in the interstice. There was no trace of paint or shaping about the stone, but it is nevertheless not improbable that it marked the interment below, having fallen from an originally upright position, with the northern end for a base, buried slightly in the completed surface.

Aside from this one burial the mound did not render much of value. Nothing was buried with the body, but articles of some little comparative interest were found at other points.

MOUND 44 OF THE AIKEN GROUP IN ILLINOIS

THE AIKEN GROUP OF EARTHWORKS

In 1898 a preliminary survey of this group was made. The group extends along the cliff bordering the Mississippi and down a long slope toward the valley of Smallpox Creek. The area covered is about a mile in length, extending through the east half of Section 1, of Town 1, west, 27 north, and across the fourth meridian into sections 5 and 8, of Town 1, east, 27 north.

There are 51 mounds comprised within the group, and without doubt a few others have been destroyed by cultivation of the land on which they stood. Of these mounds 12 are conical, 38 are long, wall-like structures, and one is an effigy. The group also comprises an earth ellipse, or hut-ring, and two circular depressions.

MOUND 45

Interest naturally centered about the effigy. The form of this mound suggests the bow and arrow to some and to others the bird with outstretched wings. The latter is most likely the correct interpretation. A small growth of oak covers the mound and adjacent

land, otherwise a good photograph of the structure could have been secured from the hill on the east. Earth or wash from the hill slope seems to have filled in slowly about the tip of the northeast wing of the figure.

Six feet in from the base, at the angle of the wing and neck, the accumulation of top-soil was 7 or 8 in. deep. This is where the more moderate slope of the upper part begins. Elsewhere the depth of the top-soil is less—3 to 4 in.—on top, and 4 to 6 in. along the base.

Three feet farther beyond this angle, or 9 ft. in from the base, was a small, thin potsherd, a black paste burnt red on both faces, with smooth finish and void of decoration. It lay at a depth of but 3 in., or just beneath the sod. Near this were two smaller sherds of a thicker ware at a depth of 8 in.

There was found in this mound a central ash-bed, or bed of mixed ash and earth, similar to that found in the simple long or conical tumuli of the district, and through the top of this at a depth of 18 in., or deeper, bits of flint or occasional pebbles were scattered in the usual manner. Samples of the ash-bed were retained, as well as the flint chips, potsherds, etc. A piece of limestone lay at a depth of 19 in., under the first potsherds mentioned.

The bottom of the old opening was found at a depth of 3 ft. 7 in. It had penetrated 7 in. into the undisturbed "hardpan" beneath the structure, on which the central ash-bed rests, and this makes it quite evident that nothing was found at the center by the original explorers. Mr. Hugh A. White, who lives close by and was my volunteer assistant, confirms this also, as he was present during the former work.

Just southeast of the center, at a depth of 22 in., in the ash-bed, was a speck of charcoal.

W. B. NICKERSON.

Chicago, Ill.

ROMAN CAMP AT RIBCHESTER, ENGLAND.—During 3 months' work at Ribchester, Mr. Thomas May has followed the whole periphery of the camp there, finding the prætorium and the foundations of the ramparts. The remains of the forum he discovered in a private house. Outside the wall was a curious kiln, with an entrance through the thickness of the main wall. This may have been used for drying grain, or even for cremation. It is similar to a kiln found outside the Roman camp of Barr Hill, Scotland. It is 6 by 4 ft. at the top and 5 by 4 ft. at the base. The foundations of the great wall rested upon 3 ft. of clay, beneath which was a layer of oak shingles. Still lower was a burnt layer, probably the traces of an older fort of wood. Some I century Roman pottery was found.

RUINS IN THE CENTRAL PART OF KHARA-KHOJA, TURFAN

ARCHAEOLOGY IN THE CENTER OF ASIA

DURING the last few years the center of Asia has proved one of the most fruitful regions for archæological research. No great works of art, or splendid palaces comparable to those of Mesopotamia and Egypt have been found; but there has been a wonderful unearthing of manuscripts, paintings, and household articles, which greatly broaden our knowledge of oriental civilization, and of the various people, who, under the name of "barbarians," played so large a part in the unmaking of the ancient nations of Europe, and the making of those of to-day. Aside from the Pumpelly Expedition to Russian Turkestan, of which the final results are shortly to be published by the Carnegie Institution of Washington, two other expeditions are of special significance. One is that of Grunwedel and Le Coq to Turfan and the north side of the Lop Basin in Chinese Turkestan, under the auspices of the German government. The other is that of Stein to the south side of the Lop Basin, under the auspices of the government of India. In both cases the archæologists have now completed a second visit to Central Asia, and are engaged in preparing the results for publication.

The chief work of the Germans was done in Turfan, a small basin lying about 200 miles north of the famous lake of Lop-Nor. Here, in the very midst of the largest of the continents, lies a basin whose floor

is below sea-level, while the mountains around it tower to heights of over 12,000 ft. Almost no rain falls in Turfan itself, but streams from the encircling mountains support some 50,000 souls. Formerly the population appears to have been much more dense, to judge from the great number and wide distribution of the ruins which everywhere dot the plain, or lie in the valleys of the Fire Mountains, a little range running east and west across the middle of the basin. The majority of the ruins are composed of adobe brick, which sometimes is found in the form of huge cubes over 2 ft. in diameter. Wood appears to have been almost as scarce in the past as in the present, because of the lack of water. Kara Khoja, the chief ruin, is surrounded by a thick adobe wall, about 60 ft. high and 2,000 ft. square. Within may be seen traces of many small buildings, and the comparatively well preserved ruins of a number of religious and public structures of large dimensions. Outside Kara Khoja there are numerous ruins of a similar sort. There are also several monasteries, or lamaseries, composed of great numbers of rooms, many of which are excavated in the precipitous alluvial banks of the small streams which traverse the Fire Mountains and water the plain upon which they debouche.

From Turfan, Kucha, and one, or two less important regions Le Coq and his coadjutors have brought to Germany over 230 cases filled with all manner of materials illustrating the ancient life of the Iranian and Turki people of Central Asia. In Turfan, unlike Russian Turkestan and the Lop basin, no evidences of extreme antiquity have as yet come to light. Most of the material does not date back further than the VIII century of our era. Its significance lies chiefly in the great variety of languages in which manuscripts have been found, and in the remarkable evidence as to the spread of artistic and religious ideas from India and western Asia, through Chinese Turkestan to the Far East.

In a recent number of *Zeitschrift fur Ethnologie,* Doctor Le Coq speaks as follows of the ruins of Kara Khoja, or Idikut Shari: "The most notable building is an adobe pyramid about 22 meters square. Each of 3 terraces shows on each side 6 niches, which formerly contained richly painted and gilded figures of Buddha. The structure lies near the east door and was probably the mausoleum of a Buddhist priest or king. In the immediate neighborhood, southwest from this building, are found the ruins of a great monastery, whose cells are still fairly well preserved. Syriac inscriptions on the walls and the discovery of fragments of Syriac manuscripts lead to the conclusion, which was later confirmed, that there stood here a monastery of Christian (Nestorian) monks. Finally, in the center of the city we found a great structure, which I might describe as a system of 3 enormous halls with vaulted chambers on the sides. On the west wall of the northern hall is found a large and rather badly damaged painting of a Manichæan high priest in full regalia, surrounded by his white-clad

priests. Inscriptions in Uighur and Manichæan script give the names of the minor, smaller priests, while many signs indicate that the more than life-size picture of a high priest represents Mani himself, the founder of the religion. This is the only Manichæan wall-painting which is known as yet, and it is certainly the most valuable object of my collection.

"In this old capital of the Turkish Uighurs, it appears that Christians, Buddhists, and Manichæans lived together in amity. The leading place was certainly taken by the Manichæans, since early Arabic inscriptions tell us that the 'khan' of the Uighurs was a Manichæan. The Chinese did not look favorably upon the introduction of a new religion, and from their annals it appears that they twice made an attempt to suppress it, once in the IX century and once in the XII century. Moreover we found one of the above-mentioned arched chambers wholly filled with corpses, still clad, and lying confusedly one upon another. By their garments they were recognizable as the bodies of Buddhist monks. The wrath of the destroyer seems to have been directed especially against Buddhism, since, while a large number of Christian and Manichæan manuscripts were found in comparatively good condition, the extremely numerous Buddhist texts were for the most part torn into little fragments. Beside the above-mentioned manuscripts we found also a great many texts in the Uighur script and speech, some Chinese inscriptions upon stone, and a number of Buddhist figures in bronze, wood, and ivory, all probably belonging to the VIII or IX century of our era."

In the monastic establishments in and on the sides of the mountain valleys innumerable pictures were found painted upon the walls, and with them were inscriptions in Central Asiatic Brahmi and Sanskrit. A large number of the pictures represent Buddha, but there were some representing mythological personages, while others present "portraits of monks, princes, and devotees from East and West, among whom the most notable are certain blue or green-eyed and brown-haired individuals, one of whom wears the old Persian cap of the nobility." These pictures are thought by Le Coq to possess the greatest importance, not only because of their high degree of artistic excellence, considering their early date—the VIII or IX century of our era—but also because they furnish the connecting link between the Gandhara art of Northwestern India, and the religious art of China and Japan, which has hitherto been supposed to be autochthonous.

Most of the manuscripts found at Turfan are written upon paper, but some are on finely dressed white leather, and others upon wood. They are in 10 different languages, Nagari, Central Asian Brahmi, Tibetan, Chinese, Tangut, Syriac, an unknown tongue which appears to be a curious variation of Syriac, Manichæan, Uighur, and primitive Turkish. The manuscripts are now being deciphered and are attracting the deepest interest among philologists, who see in them not only clues to many linguistic problems, but a number of most important new

RUINS IN CENTRAL ASIA

Village of Tuyok, Turfan, showing the famous Mohammedan Shrine

Deserted Hamlet of Kumush, on road from Turfan to the Lop Basin

Buddhist Ruins at Endereh, dating from VIII century A. D.

Ruins of Central Part of Kara Khoja, Turfan

RUINS OF BUDDHIST SHRINE, NEAR LEMJIN, EAST OF TURFAN

problems. It is most remarkable that here in a provincial town of far western China abundant manuscripts should have been collected in languages spoken in the remotest parts of the continent. Turfan must have been in close touch not only with the countries immediately around it, but with India, Persia, and even far distant Syria, whence Nestorian Christians are known to have penetrated to China. They brought with them their literature, for Le Coq found one Syriac fragment containing part of the Gospel of Luke, while another contained part of the Letter to the Galatians, and the legend of the Finding of the Cross by the Empress Helena. In the VIII and IX centuries of our era there must have been a degree of civilization and communication in the desert regions of Central Asia vastly in advance of anything which now exists.

Turning now from the north to the south side of the great Lop Basin, which lies just north of Tibet, we find that the remarkable discoveries of Doctor Stein supplement and confirm those of the Germans at Turfan. Further examination of the numerous sand-buried ruins in the neighborhood of Khotan and eastward, gives added certainty that near the beginning of the Christian era an Indian language and an Indian art tempered by Greek and Scythian influence had come across the Himalaya and Kwen Lun Mountains and established itself

SAND-BURIED RUIN AT NIYA, SOUTH OF THE LOP BASIN.
ABANDONED BEFORE 300 A. D.

in the Lop Basin. At the same time Buddhism had been introduced. Evidences of the all-important part which it played in the life of the people are found in the fact that almost all the sites excavated by Stein have lamaseries as their most essential structures.

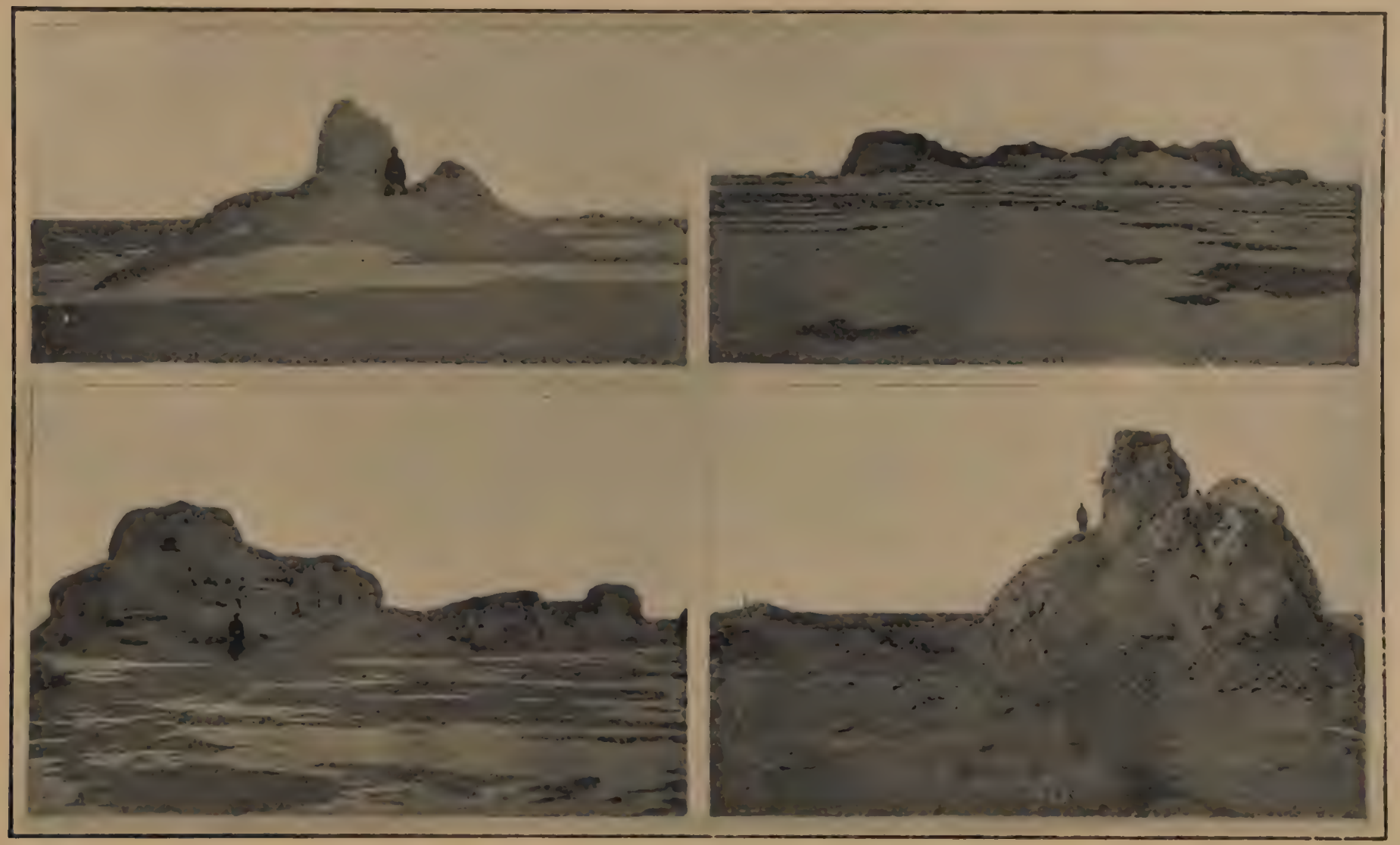
The Buddhist or pre-Mohammedan ruins are of two distinct dates. At site after site there is evidence of an earlier occupation, which came to an end in the latter half of the III century of our era, and of a later occupation, which apparently lasted only a short time and came to an end about the close of the VIII century. The most interesting relics of the first period consist of documents upon wood in the so-called Kharoshthi language and in Sanskrit. Chinese documents are also found written upon paper, and in some places, as at Khadalik, Sanskrit manuscripts have been recovered written upon birch bark. Many of the documents are parts of the Buddhist religious books, but a fairly large number, embracing practically all of those written upon wood, are ordinary accounts of everyday matters, such as commercial transactions, leases, official orders, accounts, and reports.* The most important relics of the later period are also manuscripts upon wood and paper. There is a change in language, however. Chinese is still the same, but the Kharoshthi tongue has disappeared. In its place there is an Iranian tongue, which has not yet been deciphered. It evidently was the common language of the people, since it is referred to by Chinese officials as the "barbarian language." For instance, in one place mention is made of a certain petition to the local authorities, which had been translated from the "barbarian language"

*See illustration in RECORDS OF THE PAST, Vol. VI, p. 330.

into Chinese. In addition to these two languages a good deal of Tibetan of an archaic type is found, and more or less Sanskrit. Evidently here, too, as in Turfan, influences from widely separated regions were at work. This is made especially evident from the fact that among the dozens of intact clay seals which Stein found upon wooden documents of the III century, "impressions from Græco-Roman intaglios prevail. Their appearance, side by side with Chinese seals, seems to symbolize, as it were, the part played by *Scythia extra Imaon* in the early cultural interchange between the classical West and the Far East."

At Miran, in the eastern part of Chinese Turkestan, near the Lake of Lop-Nor, Stein carried on excavations in the recently discovered ruins. Among other things he found in the old castle nearly a thousand Tibetan documents, dating from the time of the Tibetan invasion in the VIII. century. "Of far wider interest and importance" than these, he goes on to say, "are the art remains which emerged from the debris mounds of the Buddhist shrines. * * * These must have been in ruins 4 or 5 centuries before the Tibetan occupation. In one of them there came to light colossal stucco relievos showing the closest relation to Græco-Buddhist sculpture of the first centuries of our era. The influence of classical art is reflected with surprising directness in the fine frescoes which cover what remains of the walls of two circular temples, enclosing *stupas* [shrines of adobe]. The main paintings, which illustrate scenes of Buddhist legend or worship, are remarkable for clever adaptation of classical forms to Indian subjects and ideas. But even more curious are the figures represented in the elaborate fresco dados. They are so thoroughly Western in conception and treatment that one would expect them rather on the walls of some Roman villa than in Buddhist sanctuaries on the very confines of China. * * * Kharoshthi inscriptions painted by the side of the frescoes, and pieces of silk bearing legends in the same script, indicate the III century A. D., as the approximate period when these shrines were deserted."

It is noticeable that the older parts of the ruins excavated by Stein, on the south side of the Lop Basin, are decidedly more ancient than those at Turfan. Between the two regions on the great delta of the Tarim River to the north of Miran and south of Turfan, Stein finds still older relics in the shape of flints, stone implements and pottery of primitive types. The discoveries of Stein confirm those of Hedin and of the present writer. It appears that before the time of any of the structural ruins found in Central Asia, a large triangular tract, measuring a hundred miles on a side, was inhabited at the lower end of the Tarim River. To-day much of the region is barren sand with no trace of living vegetation. The river still supports a considerable belt of poplars and reeds along its whole course, but the water is so saline that it cannot be used for irrigation, and the number of inhabitants is only a few hundred, most of whom are fishermen or shepherds.



RUINS IN THE LOP BASIN

Buddhist Stupa at Miran
Buddhist Lamasery at Miran

The Fort at Miran
Lamasery (left) and Stupa (right) at Sulan, North of Lop-Nor

The most notable of Stein's recent discoveries was made near Sa-Chow, or Tung-Hwang, about 300 miles east of the regions which have just been described, and not far from the borders of China Proper. Five days' journey west of Tung-Hwang he came upon the watch stations, sectional headquarters, magazines, and portions of the rampart of an ancient line of defense, which he followed eastward for 140 miles. In describing this in the Geographical Journal for November, 1907, he says: "From the Chinese records, mostly on wood or bamboo, which the excavation of almost every ruin yielded in plenty, I was soon able to make certain that this frontier line was constructed at the close of the II century B. C., under the Emperor Wu-li, who commenced Chinese expansion into Central Asia. It appears to have remained regularly garrisoned down to the middle of the II century A. D. Dated documents are particularly numerous from 98 B. C. to about 25 A. D., the time when a period of internal and external troubles came to an end with the advent of the II Han dynasty. There can be no doubt that the purpose of the *limes* was to guard the territory south of the Suli-ho River, which was indispensable as a base and passage for the Chinese military forces, political missions, etc., sent to extend and consolidate Chinese influence in the Tarim [Lop] Basin, and farther west. The enemy, whose attacks had to be warded off, were the Hsiong-nu, the ancestors of those Huns who some centuries later threatened Rome and Byzance."

The west end of the wall bends around to the southwest and rests "on extensive salt marshes and equally impassable mountain-like ranges of drift sand." Eastward it extends to the oasis of An-shi, whence "it is likely to have extended to the present Kia-yu-kuan gate of the 'Great Wall,' " of which it appears to have been the ancient extension at the time when the deserts of Asia were less extensive than they now are.

The wall was built on a fairly large scale, for "one of the best preserved ruins is that of an imposing magazine forming a solid block of halls nearly 500 ft. long." Relics are found of the days when, as is well known, one of the most important of all trade routes between the Far East and the West passed through this now almost impassable region. They are in "the form of silk pieces inscribed with Indian, Brahmi, and Kharoshthi." In addition to these Stein found a number of letters carefully fastened, and containing writing of which the script is Aramaic, although the language may be Iranian. "Most of these turned up along with Chinese records of the time of Christ. Can they have been left behind by early traders from Persia or Western Turkestan coming for the silk of the distant Seres?"

In considering the archæology and history of ancient times in Central Asia no problem is more important than that of the possible changes in physical conditions which may have taken place, and which may have been the cause of the abandonment of once prosperous districts. As the writer has shown in *The Pulse of Asia,* there is reason to

believe that at the time of Christ this part of the world was much better watered than is now the case. A few centuries later, or roughly, from the III to the VI or VII centuries, there was a time of rapidly increasing aridity, followed by a few centuries of greater rainfall, or at least of more favorable climatic conditions of some sort. It is interesting to note that the time of extreme aridity agrees perfectly with the time of the abandonment of the older ruins investigated by Stein, and with the period of about 5 centuries, when Chinese rule in Turkestan gave place to chaos and depopulation. At the same time Turfan also appears to have been in a very low state, as would be expected if, as there is reason to believe, the climate were even drier than it now is. When we come to the period from the VII to the IX cen-

BUDDHIST RUINS AT ENDEREH, DATING FROM ABOUT THE END OF THE VIII CENTURY

turies it is again perhaps not without significance that both in the Lop Basin and still more in Turfan, there is a great revival of civilization, and a very marked increase in population. It appears as if the increase in the habitability of the country by reason of the decreasing aridity gave a chance for progress not only in population, but in all the various lines which go to make up civilization. The Tibetan invasion in the latter part of the VIII century interrupted progress in the southern part of the Lop Basin, but not, apparently, in the northern part, or in Turfan.

There is doubtless danger of assigning too great an influence to purely physical causes, but nevertheless it is worth while to note that

MOHAMMEDAN RUINS AT ENDEREH

the history of the Lop Basin at this time is what would be expected from a knowledge of the climatic changes which have occurred there. In the Tian Shan plateau there is evidence that during a dry, warm period, presumably between the II and VII centuries of our era, agriculture was practised at a much higher elevation than is now the case, and the capacity of the plateau to support population was thereby correspondingly increased. It is reasonable to suppose that the same was true on a much larger scale in cold Tibet. If then, after a period of comparative warmth and prosperity, the country became colder and less habitable in the VII and VIII centuries, the people would suffer from the failure of crops. If the suffering became great, wars would almost inevitably break out, and the tendency would be to invade and conquer the southern part of the Lop Basin, the nearest available region, where there were opportunities for plunder, or for settlement.

In reference to the newly discovered portion of the Great Wall, Doctor Stein makes some interesting and suggestive comments on the subject of changes of climate. "Dessication within historical times," he says, "on which Mr. Huntington's recent investigations in Turkestan have thrown so much light, has left quite as distinct traces in the Tun-huang [Tung-Hwang] region as throughout the southern part of the Tarim [Lop] Basin. We could scarcely wish for a more accurate gauge by which to estimate the extent of the physical change that has thus taken place in this part of Asia within exact chronological limits than this border-line, drawn through the desert by Chinese engineers in the closing years of the II century B. C. The ground it traverses has remained wholly untouched by the manifold and often

GRAVE, MARKED BY CIRCLES OF POPLAR BILLETS, NEAR SULAN

complex factors connected with human activity, in the shape of irrigation, etc., which affect inhabited areas, and there is plenty of evidence to show that those who laid down the line, selected the positions for watch-stations, etc., had been guided by a sharp eye for all surface features and their practical advantages. By closely studying their work a great mass of important observations could be gathered. In the many places where the flanks of wall sections rested on marshes or small lakes, it [is] easy to ascertain the fall in the water level, distinctive enough, but nowhere excessive. The materials which [have] been used in the construction of the *agger,* a rampart of gravel or clay cleverly strengthened by regular layers of fascines, [afford] tangible evidence as to the vegetation then (but not now) to be found along the various depressions."

Stein goes so far as to suggest that dessication may proceed to still greater extremes than those of to-day. Everywhere in the vicinity of the oasis of Tung-Hwang near the eastern end of the newly discovered wall, he was "able to observe the far-reaching effects which the devastation and loss of population attending the last great Mohammedan rebellion [which lasted for 10 or 12 years beginning in 1863] have had on the cultivated area. Taking into account the prevailing physical conditions, it appears improbable that the lands abandoned to the desert on the outskirts of the oasis will ever fully be recovered again for human occupation. Again and again I came upon such ruins of recent date which drift-sand is steadily invading. There is more than one 'old site' in formation here which might well be earmarked—for the archæologist, say, of 4000 A. D."

ELLSWORTH HUNTINGTON.

New Haven, Conn.

THEODORE FRANCIS WRIGHT

THEODORE FRANCIS WRIGHT, late Hon. General Secretary of the Palestine Exploration Fund for the United States, and regular contributor to RECORDS OF THE PAST, was born in Boston, Mass., August 3, 1845. He graduated from Harvard University in 1866. In the second year of his college life, 1864, he answered the call of his country for the defense of the Union, and served as First Lieutenant in the 108th Regiment of U. S. Colored Infantry for a term of 14 months, when, the war having ended, he resigned, and was honorably discharged, resuming his studies at the University. Upon his graduation he attended the New Church Theological School and was ordained into its ministry in April, 1869. Mr. Wright became pastor of a society in Bridgewater, Mass., where he remained 20 years. He became a frequent contributor to the pages of *The New Jerusalem Magazine,* the monthly periodical of the church, and in 1880, its editor, and in 1893, the editor-in-chief of its successor, *The New Church Review,* continuing to hold this position to the end of his life.

In 1884 Mr. Wright was called to the Professorship of Homilectics and Pastoral Care in the Theological School and in 1889, removing to Cambridge, he became Dean of the School, and officiated as minister in its Chapel. When by residence he was again in close touch with the University, he took a course in Philosophy for the degree of Ph. D., which was conferred upon him at Commencement, 1891, when he was also elected a member of the Phi Beta Kappa Society.

Of Doctor Wright's life in Cambridge, Dean Hodges, of the Episcopal Theological School, has paid this tribute: "Dr. Theodore Wright was a citizen of high type. He had his own immediate professional work to do, and, no doubt, it was sufficiently absorbing and exacting; but he found time and energy for the service of the community. He was the vice-president of the Associated Charities, and a member of the executive committee of the organization of the clergy for the annual No-License campaign. And in each of these positions he was eminently active and useful. * * * Such men as Dean Wright are the salvation of the community—they are essential to the progress of our public life. They are setting forward the coming of the kingdom of heaven."

In 1887 Doctor Wright made a tour of Palestine, and spent two months in Jerusalem. His work for the Palestine Exploration Fund began in May, 1890, when he received his appointment as Hon. Gen. Secretary for the United States and Lecturer for the Fund. His interest in the work of the Fund was very deep. He gave time and thought to advance a wider interest in its work. He delivered many

lectures to inform the public as to what had been accomplished. He received and forwarded subscriptions and acted as agent to sell its publications. While he was closely engaged with his regular duties he found time daily, as a work of love, to answer correspondents, considering this his recreation from other duties.

Doctor Wright had three times attended the Annual Meetings of the Fund, in London, meeting the members of the Executive Committee, and had the honor of addressing the Society in 1903, the Bishop of Salisbury presiding, as to the interest of American scholars not only in the careful work done by the Palestine Exploration Fund, but in all thorough archæological work wherever it might be undertaken. At the Columbian Exposition, in Chicago, Doctor Wright spent 4 months in charge of the exhibit of the Fund, and again was at the St. Louis Exposition, giving earnest effort to extend knowledge of the Society's work. He counted whatever he could do toward the advancement of the work of exploration in Palestine as not only done to forward most interesting archæological knowledge, but as calculated to furnish valuable confirmation of the historical portions of the Sacred Scriptures. It was, therefore, out of his love for the Holy Word as the Word of God that he labored with so much of heart and mind and strength to help to establish incontrovertibly its historical truth as an additional basis for faith.

Doctor Wright was a member of the American Oriental Society, the Society of Biblical Literature and Exegesis, and the Archæological Institute of America. He was the author of 4 books, entitled, respectively, *Life Eternal, Realities of Heaven, The Human and Its Relation to the Divine,* and *The Spiritual Exodus.*

Doctor Wright was of an intensely active nature, and, impelled on by the love of performing useful work, he had overtaxed himself, and too late loosened the harness which he had valiantly put on in the service of his fellowmen, so that, although he was upon the Mediterranean Sea for a season of rest and travel in Egypt and Palestine, the call came, and he expired suddenly on November 13, 1907, and entered into his rest with his Lord.

HORACE W. WRIGHT.

SKELETON OF A ROMAN HORSE.—During excavations on an old Roman military camp at Newstead, near Melrose, Scotland, numerous bones were found in refuse pits. From among them almost the whole skeleton of a horse was reconstructed. This has been set up and is on exhibit in the Small Mammal Hall of the Royal Scottish Museum at Edinburgh.

ADDITIONS TO THE ART INSTITUTE OF CHICAGO

OPPORTUNITY will ever be the collector's god in the moment that tries his soul. An ancient sculptor modeled that elusive deity advancing on winged feet and balancing the bar of a pair of scales on a razor's edge. Many a connoisseur has entered an auction-room to glance at engravings and emerged from it with a dainty porcelain shepherdess. The Antiquarians of the Art Institute of Chicago were, hitherto, collectors of everything but pictures. They have suddenly, however, enriched Chicago with a Christ in the Garden, by Lucas Cranach. There is surely some little secret behind this departure from the trodden path, some story such as art fanciers delight in, of bankrupt church or castle attic. We shall only dare betray that the fair collectors were well advised by experts of European authority as to the authenticity of the work in question, and the wisdom of its purchase. The wider public, which cares nothing for the museum man's categories, is the manifest gainer by it.

German art has hitherto glared principally by its absence in the Art Institute's galleries of architecture, sculpture, and painting. The Charles L. Hutchinson collection of old masters, which was dedicated there the other day, is composed almost entirely of Dutch paintings. They are supplemented, a trifle oddly, by one old Flemish portrait, a Velasquez or two, one splendid Rubens, one Brusasorci, and one capital Lebrun. The trustees of the Institute evidently feel the need of putting the world's art more broadly before the Chicago public. They have recently made their obeisance to Preraphaelite Italian art by their purchase of the splendid copies of two Botticelli frescoes, and to Spanish by the far more costly purchase of El Greco's Assumption, which is now beautifully displayed with the new Lucas Cranach in the Antiquarians' Room. Until the present year, on the other hand, neither old German art nor modern German art have been conspicuously represented on the Lake Front. It was time to change this. Mr. von Frantzius, the lender of the "Salome," by Franz Stuck, in the south wing of the Art Institute, and the Antiquarians with this new purchase of a Cranach picture are initiating a Germanic movement, which time is bound to broaden and deepen.

Albert Dürer, the German, was an incomparable genius besides. He belongs to the world. Raphael put Dürer's portrait in the School of Athens. Dürer's Nuremberg was a Renaissance capital. The Protestant citizen was a Catholic painter. In Lucas Cranach the Elder, his contemporary, we have the Teutonic artist undisguised. The Gothic painter's brush has felt the hardening effect of Luther

and Lutheran Wittenberg. We know what the German reformer thought of Leo the Tenth's Rome! A weaker character than Cranach's would have succumbed where Luther was Pope. With no altars to magnify, Cranach became a printer and engraver, painted portraits of court and clergy, and courted public office. He was burgomaster of Wittenberg 6 years.

NIGHT IN THE GARDEN OF GETHSEMANE, FROM A PAINTING BY CRANACH, THE ELDER

Calvin would not have tolerated Cranach's nude Lucretias and Venuses. Luther endured them. They are deliciously German in their classic disguise. A French critic raises the indiscreet question: Who were these ladies who consented to pose for the painter in austere Protestant Wittenberg? It is clear that Lucas Müller, of Cranach,

had some customers of unpuritanical ideas. One may most safely look for them among the princes and princesses whose esteem the artist won. Cranach has a disconcerting way of utilizing his observations at court. He has left portraits of two Saxon princesses with queer, slashed linen gloves on. The Empress Helena wears similar gloves in one of his sacred pictures. Elsewhere he dresses Venus in a Saxon princess' felt hat and dog-collar necklace. His portraits of Luther and Melanchthon, in their ecclesiastical caps and gowns, are familiar enough. There is an engraving of the Dresden Luther in my German Bible. The lineaments and dress of a "Young Patrician," which was temporarily exhibited in Berlin, are curiously akin to it; the Berlin "patrician" is, if we mistake not, a young Luther in a moustache. Cranach may have executed it at the Junker Georg period. The crown of all Cranach's, however, is the master's grave, white-bearded portrait of himself. It verily leaves Dürer and even Holbein far behind. Hans Thoma paints a man that way.

In the absence of a sitter or model, Cranach's work became singularly uneven, and is frequently incorrect. The heads are too big for the bodies that wear them. Ears and eyes are misplaced. The two sides of the face of the same personage become dissymmetrical. The proportions of the human figures are not merely eclipsed, but forgotten under red and blue draperies. The Christ in the Garden has these faults. The master's faculty for character painting, and the sheer beauty of his color redeems his sacred pictures. They remind one of the biblical scenes on stained-glass windows, where a limpid blue ground, or an effulgent ruby cloak transfigures uncouth drawing to a mystic glory.

The first peculiarity of the small picture at the Art Institute is the prodigious smoothness of its finish. Henner was about the last modern who clung to this survival of the tempera painter's technique. The next thing we note is the deep red of one sleeping disciple's gown, the contrasted blues of another's, the soft play of light and dark gray on the Lord's own tunic, the yellow robe of the hovering angel, who offers Him the cup and cross. These are not the rainbow tints of Fra Angelico, and of the old miniaturists, but the dark, translucid colors, rather, of the old English glass painters. Cranach's technique has another point in common with glass painting in the free use and exceeding fineness of its line work. The filamentous flowers and grasses, embroideries, and hair of the Gothic and Renaissance windows were engraved in the wet paint with stick or needle. Cranach's are painted with the fabulous dexterity of the peintre-graveur he was. The precision of his detail is out of all proportion to the indifferent correctness, with the almost studied incorrectness, of his head and figure drawing.

The composition of the little painting, which was probably the left-hand panel of a triptych, is two-storied. Christ kneels to the right above, among rocks and evergreen bushes, supposed to be olive

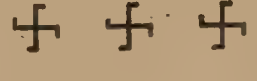
trees. The angelic cup-bearer faces him with a glance of ineffable pity. Three disciples lie asleep in the foreground below Him. The painter has lavished the resources of his pencil on the heads of these figures. John, Peter, and James are the characters intended. John's young face and hair at the left have the beauty of a woman's. The profile of the recumbent James, opposite, has a masculine beauty. Saint Peter, between, is as ugly as Cranach could paint him from life. He is one of the old, half-toothless inebriates (*"ces vieux soudards édentés"*), whose features the French miniaturists of the flamboyant Gothic period loved to portray. The sleeper's mouth hangs open, and he probably snored. All three of the disciples fit themselves to the rectangular picture as best they can, sacrificing both truth and grace in the process. No reminiscence of Italian masters troubled Cranach in this part of his painting. Nevertheless, the flaws are the master's no less than the merits. He has painted a jolly little perspective glimpse of wattled fence, soldiers, hills, and sunset, in the left upper corner of his picture, opposite the angel. It is Judas and his patrol coming to arrest the Redeemer.

Too much has been made of the argument that Cranach was a publisher of sacred books, engravings, and pictures, not necessarily or entirely the product, always, of his own hand. He has signed the Christ in the Garden with his famous mark of a minute, winged serpent, carrying a ring in its mouth. The handling of the faces and the style of the signature in this picture agree with the manner Cranach observed in his *Suffer the Little Children,* a work executed in 1538.

It is as hopeless to catch up with educational ambitions as with the pressure of traffic. Even a whole room-full of old and new German paintings at the Art Institute would be only a beginning. Old masters cannot be had in avalanches. Nevertheless, there is a reasonable method of recognizing the importance of early German art in a public gallery better than Chicago has yet recognized it. A sprinkling of German and Swiss stained glass and quaint glassware, pewter, and china, carved furniture, and embroidered linen would be something. So would a systematic collection of the German engravers in originals and facsimile, Aldegrever and Schöngauer, Dürer and Cranach and Burgkmair, and so on down to Ludwig Richter and Max Klinger. Should such a gallery come into being, Cranach's *Christ in the Garden* will be honored as its foundation stone.

ALFRED EMERSON.

Chicago, Ill.



LOG CABIN—EXTERIOR

PIONEER HOME-MAKING IN AMERICA

IT WILL be difficult for the present generation to fully realize the conditions which surrounded our pioneer fathers and mothers one hundred years or more ago. The "Old Log Cabin"* produced those strong, clean, independent, self-reliant individuals whom we honor to-day as our national heroic characters.

There is no need that we mention in this article the name of a single person who thus began an honorable life, because any schoolboy or girl can enumerate them by the hundred. These pioneer homes were constructed without the aid of architect or artisan, and usually with the axe, entirely without saw, plane, or hammer; even nails were unknown or unobtainable. The walls were of selected logs, formed straight and true by nature, cut to length measured off not with a carpenter's rule, but by a notch cut into the handle of the axe. The bark was hewn off on two sides and each was then rolled up on skids to its place in the wall, notched, and fitted at each end with the axe in the hands of the skillful and self-reliant pioneer. These walls, when built up sufficiently high, were surmounted with a roof made of clap-boards rived off from the butt-end of a tree that had been felled to the ground, selected because of its straight grain that permitted broad, thin pieces to be thus split off. These clap-boards, laid to overlap, were held in place by logs laid across at intervals. The logs of which the walls were constructed were so skillfully fitted that only a small space was left between which was filled or "daubed" with clay, often mixed with straw or rushes to hold it together.

The only other tool beside the axe was the auger—often consisting of an iron bar or rod, forged into a rude cutting edge at one end, with a handle at the other like a letter T. With this tool, holes were

*The illustrations used in this article are an exterior and interior view of the home of Col. Robert Patterson, which has been preserved and kept in its original condition by his descendants in a small park at the corner of Main and Brown Streets, Dayton, Ohio. See RECORDS OF THE PAST, Vol. V., p. 241,

fashioned through straight pieces for jambs, which were set upright on each side of an opening left for a door and fastened to each log by a pin shaped with the axe and driven through in the end of each log.

Doors were formed of large clap-boards riven in the same manner as those for the roof and pinned with these wooden pins in lieu of nails to a dove-tailed frame, and then the whole was hung to the jambs by thongs of deer hide for hinges.

The open fireplace often occupied nearly all of one end of the cabin. This fireplace and chimney were constructed with smaller logs and pieces framed together in the same manner that the walls were made, and lined inside for a fire box with large flat stones set upright, and the whole daubed with clay clear to the top of the chimney.

Here then was shelter and warmth provided for, with fire for cooking as well. The refinements of civilized life were provided later as time would permit. The floor of earth was covered with puncheons,

LOG CABIN—INTERIOR

hewn flat and smooth on one side, then set into the earth floor and skillfully joined with the axe. A puncheon table was pinned to the logs on one side near the fireplace. On the opposite side from the fireplace bunk-beds were erected in a similar manner, and "cane feathers" in the South, fragrant cedar boughs in a pine country, and boughs, twigs, and leaves elsewhere provided the mattress and springs, while short pieces of puncheon with legs supplied the necessary stools or benches to sit upon.

Around the walls wooden pegs were driven into the logs, which served the purpose of a place on which to hang garments not needed to be worn, but these impromptu wardrobes were seldom in use, as extra or unnecessary garments were the exception rather than the rule in the beginning of pioneer home-making.

The poet is yet to rise who shall fashion into rythm and cadence the sturdy independence, the simple honesty and the god-fearing simplicity of the wholesome lives begun under such apparently unauspicious conditions.

THOMAS FORSYTHE NELSON.

Washington, D. C.

BOOK REVIEWS

PRIMITIVE SECRET SOCIETIES

SECRET societies in some form seem to have existed in every race during a period of their development, and in a greatly modified form continue at the present time in the most highly civilized nations, so that this treatise on the development of primitive secret societies by Dr. Hutton Webster is of very general interest and importance. The work is a collection of observations and deductions taken from a vast number of sources with full bibliographical references. The author traces the development of the most primitive societies to their culmination, and in many cases traces also their decline, and the reasons therefor.

The most primitive of these societies was nothing more than a separation of the sexes out of which the institution known as the "Men's House" developed. Examples of this institution are found to have existed among savage and barbarous peoples in all parts of the world, from Australia, with its numerous native tribes, among some of which it still exists, to the Eskimos in Northern Labrador and Greenland. To the "Men's House" women were never admitted, and in most cases young boys were not allowed there until they had been initiated, or reached the age of puberty.

The next stage, apparently, in the development of such societies was the separation of the males according to age. The first step was the initiation ceremony, performed when the youth reached the age of puberty and put away his mother and the various forms of woman's work and amusement to which he had been accustomed as a child. Of the origin and significance of puberty rites, Doctor Webster says:

> No doubt various beliefs arising from many different sources have united to establish the necessity of secluding boys and girls at puberty. Isolation from the things of flesh and sense has been a device not infrequently employed by people of advanced culture for the furtherance of spiritual life, and we need not be surprised to find uncivilized man resorting to similar devices for more practical purposes. The long fasts, the deprivation of sleep, the constant excitement of the new and unexpected, the nervous reaction under long-continued torments, result in a condition of extreme sensitiveness—*hyperæthesia*—which is certainly favorable to the reception of impressions that will be indelible. The lessons learned in such a tribal school as the puberty institution constitutes, abide through life. Another obvious motive dictating a period of seclusion is found in the wisdom of entirely separating the youth at puberty from the women until lessons of sexual restraint have been learned. New Guinea natives, for instance, say that 'when boys reach the age of puberty, they ought not to be exposed to the rays of the sun, lest they suffer thereby; they must not do heavy manual work, or their physical develop-

**Primitive Secret Societies,* A Study in Early Politics and Religion, by Hutton Webster, Ph.D., pp. xiii, 227.

ment will be stopped, all possibility of mixing with females must be avoided, lest they become immoral, or illegitimacy become common in the tribe.' Where the men's house is found in a tribal community, this institution frequently serves to prolong the seclusion of the younger initiated men for many years after puberty is reached.

Mixed with the bad in connection with these ceremonies there is a great deal of good, which is taught the young men in training for initiation into these societies.

Obedience to the elders or the tribal chiefs, bravery in battle, liberality toward the community, independence of maternal control, steadfast attachment to the traditional customs and the established moral code, are social virtues of the highest importance in rude communities. Savage ingenuity exhausts itself in devising ways and means for exhibiting these virtues in an effective manner to the young men so soon to take their place as members of the tribe. Some of the initiatory performances are even of a pantomimic nature intended to teach the novices in a most vivid fashion what things they must in future avoid.

In all these societies the elders have the controlling power, the younger men having to pass through various stages. In the Yoruba tribes of West Africa this is carried so far that a boy must remain under the control of the "presiding elders" of the tribal society until he has killed a man, thus demonstrating his courage and securing "for himself the soul of the man he has killed as a spirit slave."

These societies gradually developed from general ones, to which almost any able-bodied man was eligible, to more and more exclusive bodies. At the same time the power of authority shifted from the elders to tribal chiefs, and a form of aristocracy arose.

In spite of these divergencies in development, it is still possible to make out the main lines along which the evolution of the primitive puberty institution has proceeded. However striking may be the differences between such an institution as the *Bora* of the Australian natives and a tribal secret society like the *Dukduk* of the Bismark Archipelago or the *Egbo* of West Africa, they appear, in the last analysis, to be due fundamentally to the changes brought about when once the principle of limitations of membership is introduced. The process which converts the puberty institution into the secret societies of peoples more advanced in culture, seems in general to be that of the gradual shrinkage of the earlier inclusive and democratic organizations consisting of all the members of the tribe. The outcome of this process on the one hand, is a limitation of the membership of the organization to those only who are able to satisfy the necessary entrance requirements; and, on the other hand, the establishment in the fraternity so formed of various degrees through which candidates may pass in succession. With the fuller development of secret society characteristics, these degrees become more numerous, and passage through them more costly. The members of the higher degrees, forming an inner circle of picked initiates, then control the organization in their own interests.

Terrorism exercised on the women and uninitiated is found in the simplest of the secret societies, but early develops into one of the most powerful instruments of the more advanced societies, as where the women and uninitiated men and boys are made to believe the sound of the Bull-roarers and sacred drums to be the noise caused "by the trampling of an evil spirit who has come to remove the boys" who

are to be initiated into the society, and the sight of this spirit would bring death to the uninitiated. Concerning the development of these societies Doctor Webster continues:

> Originally, as we have seen, at the initiation ceremonies, youths were solemnly inducted into the religious mysteries of the tribe; mysteries, which, though not unattended by many devices of a fraudulent nature, did nevertheless maintain themselves by a real appeal to the religious asperations of the candidates. But with the advance to the secret society stage, the religious aspects become more and more a pretence and a delusion, and serve as a cloak to hide mere material and selfish ends. The power of the secret societies in Melanesia and Africa rests entirely upon the belief, assiduously cultivated among outsiders, that the initiated members are in constant association with the spirits, with the evil spirits especially, and with the ghosts of the dead.

The decline of the tribal societies is marked, according to Doctor Webster, by the admission of women to part of the privileges of these societies. At present the advance of civilization is causing the most rapid decline in the strength of such societies.

Clans and magical fraternities are the last development. The traces of the latter of these are seen in many of the more advanced civilizations, and the "mysteries of classical antiquity" disclose "in the rites of the *Eleusinia* and *Thesmophoria,* the dimly veiled survival of an earlier and a ruder age. For the magical practices and dramatic ceremonies afterward elaborated into the ritual of a solemn religious cult, which were the chief characteristics of the Greek mysteries, may be traced by the curious student to primitive rites in no wise dissimilar to those which, as we have seen, embody the faith and worship of the modern savage. *Omnia exeunt in mysterium!*"

Doctor Webster's volume represents a vast amount of research and presents a remarkable collection of evidence bearing on this universal custom of primitive peoples. We have here only indicated the outline of the book, but have given enough to show its breadth and the interest which it creates in this most fascinating subject.

FREDERICK BENNETT WRIGHT.

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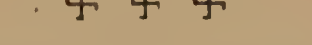
AVESTA ESCHATOLOGY[1]

A comparative study of the Exilic Semitic Scriptures with the Avesta has been prepared by Dr. Lawrence H. Mills, professor of Zend Philology in Oxford, in which he endeavors to trace the in-

[1] *Avesta Eschatology compared with the Books of Daniel and Revelations,* by Dr. Lawrence H. Mills. 85 pp. Chicago: The Open Court Publishing Co. 1908.

fluence of Medo-Persian and Babylonian philosophy upon the Jewish literature during the captivity, which has become incorporated into our Bible, as seen in the familiar passages which we meet with in Chronicles, Ezra, Nehemiah, and again later in Isaiah and Daniel. He seems to present a point of view, if not a new field, for profound and interesting religious detail, when studied in connection with the Achæmenian inscriptions of the Persian kings, whose edicts are cited in the Bible.

Persian theology seems to have been divided into two schools: The Median, which was more thoroughly Zoroastrian, as represented by the Zend-Avesta, and the Southern School of Persepolis, as represented by the Achæmenian inscriptions, and he takes it for granted that the entire mass of Zoroastrian doctrine must have exerted a most decided influence upon the development of Jewish Exilic, and hence of the Christian theology.



THE DATED EVENTS OF THE OLD TESTAMENT[2]

The progress of excavations in the Far East has added so much to our knowledge of the early history of the countries, directly and indirectly referred to in the Old Testament, that it is now possible to ascribe fairly accurate dates to many events there recorded as taking place since the time of Abraham. Although it will be many years before Biblical dates can be so definitely established that there will be no divergence of opinion among eminent scholars, yet a multitude of people desire a summary of the conclusions reached by scholars as to these dates, which is conveniently arranged for ready reference. It is just this want which is satisfied by Dr. Willis Judson Beecher in his recent book on *The Dated Events of the Old Testament*. In the preface he tercely expresses the object of the book by saying, "The tables in this little volume present to the eye a reasonably complete list of the events narrated in the Old Testament, with their time relations; first of all the relations of each event to other near events, Israelitish or foreign, and also its date in terms of the Christian era. The tables distinguish between the dates which are fixed by positive evidence and those which are matters of conjectural opinion. They also present to the eye a conspectus of the evidence by which each event is dated, and the reasons for the variant opinions that men hold concerning the chronology. And not least important, they make graphic by means of their blank spaces the fact that in the Old Testament we have never an attempt at a complete history, but everywhere narratives of selected incidents."

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[2]*The Dated Events of the Old Testament*, being a presentation of Old Testament Chronology. By Willis Judson Beecher, D. D., pp. 202. The Sunday School Times Company, Philadelphia. 1907.

Every one interested in Bible history, especially Sunday-school teachers and the clergy, will welcome this volume, which well fulfills the forecast as set forth in the preface.

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ARCHAEOLOGICAL AND ETHNOLOGICAL PUBLICATIONS OF THE UNIVERSITY OF CALIFORNIA[3]

It is fortunate that the University of California is able to push its ethnological work with such vigor at the present time, for each year the data for pursuing this subject in its state are diminished, and the study of the great linguistic stocks—"the Pomo, Yuki, Athapascan, Wintun, and Moquelumnan"—inhabiting California prior to the settlement by the whites, becomes more difficult.

This monograph on the *Ethno-Geography of the Pomo and Neighboring Indians,* by S. A. Barrett, is prepared from notes made by the author in 1903, 1904, and 1906. He considers not only the linguistic boundaries of the tribes, but also their present villages and customs, and their old village and camp sites. A large folded map shows the linguistic divisions and village sites, as determined by the author.

A short report on the *Geography and Dialects of the Miwok Indians,* by S. A. Barrett, and also one on the *Evidences of the Occupation of Certain Regions by the Miwok Indians,* by A. L. Kroeber, has just been issued by the University of California.

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PRINCIPIA ETHICA[4]

In this book Dr. George Edward Moore treats the subject under the following heads: The Subject-matter of Ethics, Naturalistic Ethics, Hedonism, Metaphysical Ethics, Ethics in Relation to Conduct, and The Ideal. He considers the main cause for difficulties in the study of the subject and the disagreements among its students to be due to "a very simple cause; namely, to the attempt to answer questions, without first discovering precisely *what* question it is which you desire to answer."

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[3] *Ethno-Geography of the Pomo and Neighboring Indians.* By S. A. Barrett. University of California Publications in American Archæology and Ethnology, Vol. VI, No. 1, pp. 332, and map.

The Geography and Dialects of the Miwok Indians. By S. A. Barrett and A. L. Kroeber. University of California Publications in American Archæology and Ethnology, Vol. VI, Nos. 2 and 3, pp. 48 and map. The University Press, Berkeley, California. 1908.

[4] *Principia Ethica.* By George Edward Moore. pp. xxvii, 232. University Press, Cambridge, England. 1903.

EDITORIAL NOTES

ROMAN TESSERÆ.—Mr. Percy Webb classes certain bronze tesseræ, or tickets, under 3 heads, imperial (or those bearing the names of emperors); mythological, and those pertaining to games. The use is not certain, but they may have served as tickets of admission, or even as lottery counters.

AURELIAN WALL AT ROME.—The Municipality of Rome started not long ago to destroy part of the Aurelian Wall between the Porta Pinciana and the Porta Salara. The more important Italian journals condemned the action, and such a storm of public opinion was roused that the government has given notice that further demolition will be stayed. The damage already done, however, cannot be repaired.

CHANGE OF HEADQUARTERS OF THE WISCONSIN ARCHEOLOGICAL SOCIETY.—Mr. Charles E. Brown, one of the organizers of the Wisconsin Archeological Society, and, since the inception of its work, the secretary and curator of the society, has been appointed chief of the State Historical Museum at Madison, Wis., one of the most important institutions of its kind in the Northwest. As Mr. Brown will continue to direct the labors of the Archeological Society, its offices have been removed from Milwaukee to Madison.

FRANK CEMETERY IN BELGIUM.—Within the last few months 45 separate graves have been opened in the Frank Cemetery at Haine-St. Paul, Belgium. In 25 of the tombs ornaments and the black pottery characteristic of the Merovingian period were found. Three seem to have been reserved for women, judging from the ornaments found, i. e., bracelets, brooches, rings, etc. The various ways of placing the bodies indicates that the cemetery was in use during an extended period.

MEANS OF COMMUNICATION ALONG THE LINE OF THE ROMAN WALL IN ENGLAND.—Mr. Percival Ross, in a lecture before the Bradford Historical and Antiquarian Society, brought forward the opinion that communications were not made from one turret to another of the Roman Wall by means of a brass speaking tube, as many have thought. Communications were made, he holds, along the road inside the wall, and carried from the turrets to the camp by horsemen.

POPULAR ORIGINS OF ART.—In a paper before the Academy of Inscriptions at Paris, M. E. Pottier considers pre-historic and savage art, which represents mainly animals useful to man, as intended to secure, by magic, an abundant supply of game or other food. To music he would ascribe a utilitarian origin also, believing it to have been employed first to direct the simultaneous actions of workers. This last would seem to be substantiated by a Greek terra-cotta of the VI century A. D., where 4 workmen are directed by a flute player.

PUBLICATIONS OF THE WISCONSIN ARCHEOLOGICAL SOCIETY.—During 1907 the Wisconsin Archeological Society has issued 4 valuable publications, *The Implement Caches of the Wisconsin Indians, The Winnebago Tribe, The Indian Authorship of Wisconsin Antiquities,* and *A Record of Wisconsin Antiquities.* Four are to be published in 1908. One of these, *Additions to the Record of Wisconsin Antiquities II,* is just issued, and another, *The Archaeology of the Lake Kashkonong Region,* is now in press.

MUMMY OF PRIESTESS OF AMEN RA.—In the Mummy room of the British Museum there is now on exhibit one of the priestesses of the priesthood of Amen Ra, at Karnak. The mummy is covered with a cartonnage casing modeled in the form of the body; the face is a portrait of the deceased, overlaid with gold. The eyes and eyebrows are inlaid with obsidian. Many representations of the priestess praying to Osiris Anubis occur on the sides of the coffin. The coffin, as is usual, is the shape of the mummified body, and coated with gold paint. The date is supposed to be 1000 B. C.

EXCAVATIONS AT OSTIA.—In the course of work at Ostia, the ancient port of Rome, a room has recently been excavated, the walls of which were painted with a single figure at each of the 4 corners, and the floor was paved with black and white mosaic. On the floor were found fragments of the ceiling, painted to match the walls. Ancient money was found, as well as several amphoræ with painted inscriptions, the bottom of a vase, glass with gold letters, lamps, remains of inlaid furniture, mosaics, and ceilings of the upper room. A corridor led to the lower room, which contained a window, evidently glazed with mica. The wall paintings in this room were better preserved than others at Ostia, because of white plaster added at some later time. Professor Vaglieri, who is superintending the work, hopes for still further treasures.

PROGRESS OF EXCAVATIONS IN EGYPT.—The following letter has been received from Dr. M. G. Kyle, at Cairo, Egypt: "Excavations are in progress in Egypt in a number of places this winter. On my way to Abu Gurob, a few days ago, to examine the great altar there, I passed the great work the Germans are doing at Abusir, under the direction of Professor Doctor Borchardt. Doctor Borchardt

was absent, but his assistant in charge, Doctor Wriszinski, was most courteous and kind, and showed me the great work just being completed of the uncovering of the splendid temple for the cult of the dead, erected, indeed, before all the pyramids. This pyramid and temple were by Sahu're, some of whose inscriptions have already been removed to the museum at Cairo, and installed there. Some new, interesting, and suggestive things will be given to the world when the work of these thorough-going German explorations is published. It may be awaited with expectation."

FRAGMENT OF AN UNCANONICAL GOSPEL.—Doctors Grenfell and Hunt have recently edited a fragment of an uncanonical Gospel, found at Oxyrhynchus. The leaf found is hardly more than two in. sq., but has 45 lines on the two sides. It is distinct from any of the other uncanonical Gospels of the II or III century, and seems to have been composed before 200 A. D., though this valuable and interesting manuscript was probably not written until the IV or V century. The chief interest is in the reference to the Jewish ceremonies of purification in connection with the temple worship. A Pharisee, a Chief Priest, was angry because Christ and his disciples had neglected the necessary ceremonies, while he himself was clean. The account continues: "The Saviour answered and said unto him, Woe, ye blind, who see not. Thou hast washed in these running waters wherein dogs and swine have been cast night and day. * * * But I and My disciples, who thou sayest have not bathed, have been dipped in the waters of eternal life."

ROMAN BRONZE VESSELS FOUND ON LAMBERTON MOOR.—Before a meeting of the Society of Antiquaries, in London, Mr. R. Smith recently described a hoard of Roman bronze vessels and ornaments found on Lamberton Moor, Berwickshire. It contains fragments of 4 skillets of saucepan shape, 4 small bowls of wrought bronze, a massive bronze beaded collar, two small spiral coils of bronze that may have been joined together, two harp-shaped brooches and another in S-form. The brooches were cemented together by the rusting of a chain that joined the pair; all were enameled in colors. This appears to have been the ceremonial outfit of some priest. A parallel collection had been found previously near Backworth, Northumberland. One of the smaller bronze vessels, from Lamberton Moor, was British in character, and had a round perforation in the base, suggesting its use as a water-clock. [For the method of using water-clocks, see RECORDS OF THE PAST, Vol. VI, p. 120.] This deposit must have been made in the closing years of the I century, or the opening years of the II century A. D.

ANTHROPOLOGY OF CALIFORNIA.—In an address before the section of Anthropology of the American Association for the Ad-

vancement of Science at the Chicago meeting Mr. A. L. Kroeber gave a review of anthropology in California. About 20 distinct languages exist among the Indians. As each has only a few words common to its neighboring tribes, Mr. Kroeber thinks these common words indicate borrowing, not necessarily relationship. Rarely are there more than 6 or 8 dialects of one stock. All are characterized by simplicity of structure. With regard to the influence of environment upon the peoples of California he says: "We are really only justified in saying that the differentiation of speech seems to be causually related with other factors and that these are immediately cultured and historical, and only indirectly physical and environmental." Physical environment, he further holds, must not be given too much credit for any given custom or culture. It may be a stimulus, or render some custom unnecessary or impossible, but it always has some historical background of culture upon which to work.

JOINT MEETING OF WISCONSIN SCIENTIFIC AND HISTORICAL SOCIETIES.—February 13 and 14 there was held in Milwaukee a joint meeting of the various historical and scientific societies of Wisconsin. About 250 persons from Wisconsin and adjoining states attended the meeting. The archæological program was largely on topics of local interest. Among the addresses were: *The Archaeological Wealth of Wisconsin,* by Mr. A. B. Stout; *Local Historical and Archaeological Museums,* by Mr. Ruben G. Thwaites; *Rude Stone Implements from the Congo Free State,* by Mr. Frederick Starr; *Judgment Used by the Aborigines in Selecting Materials for Their Utensils and Weapons,* by Mr. George L. Collie; *Archaeological Work in Wyoming,* by Harlan I. Smith; *Trade Beads of Wisconsin,* by Mr. Publius V. Lawson; *The Tabular Mounds of Wisconsin, Their Purpose and Authorship,* by Mr. George H. Squier; *Mounds in the Vicinity of McFarland, Dane County,* by Mr. W. G. McLachlan; *The Occurrence of Perforated Pottery-disks in Wisconsin,* by Mr. Charles E. Brown; *A Mandan Village Site,* by Mr. Herbert C. Fish; *The Progress of Archaeological Research in Wisconsin,* by Mr. Warren K. Moorehead.

ROMAN COINS.—Mr. G. F. Hill recently described to the Royal Numismatic Society (London) two hoards of Roman coins. One hoard contained bronze coins of the Tetrarchy (Diocletian, Maximian, Herculeus, Constantius I, and Galerius), found near Brooklands motor track, Weybridge. The coins were *folles,* 136 in number, struck in London, Aquileia, Tarraco, Lyons, Treves, and Alexandria, about A. D. 296-307. They were mostly of the "Genio Populi Romani" type. The mint at Treves contributed 75 to this hoard, that at London 30, and that at Lyons 21. The other hoard contained 337 silver pieces, siliquæ found some years ago, at Ichlingham, Suffolk. They belong to the second half of the IV century, or the early years of

the V century, from the time of Julian II to Arcadius. The mints represented are those of Treves, Lyons, Arles, Milan, Rome, and Siscica. Evidently the coins were buried about the time of the departure of the Roman legions from Britain. They may have been part of a military chest, or of the private fortune of a Roman soldier of high rank. In the *Anglo-Saxon Chronicle*, it is mentioned that the Romans collected all their treasure, some of which they buried, so that no man might find it, and some of which they carried away with them into Gaul. This hoard may have been such treasure.

WORK OF BRITISH SCHOOL AT ATHENS.—The continuation of the excavations of the sanctuary of Artemis Orthia at Sparta has brought to light many articles valuable not only artistically, but as indexes of the external relations of Sparta in early times. The deepest layer yielded a small quantity of amber, implying connection with the northern part of Europe. In the layer dating from the VII century B. C., were "orientalizing" pottery and ivories, the latter resembling the newest finds from the Artemisium at Ephesus, interesting, therefore, from the tradition that an Ionian came to Sparta and built the temple of Athena Chalcicœcus. Egyptian influence appears in a number of scarabs and intaglio seals.

The bronzes found in this sanctuary may be arranged chronologically from the stratification. The consideration of the style tends to the same classification. Certain bronze brooches with double spirals seem to have been the models for those of ivory found at Sparta about the close of the Geometric era. The finest bronze from the temple of Orthia is an archaic Greek brooch, showing on one side a woman's head crowned with a *polos,* and on the other the forepart of a lion.

The earliest pottery belongs to the Geometric period. The Laconian style is simple. It is succeded by an "orientalizing" style of local manufacture, closely resembling Cyrenaic ware of the VI century B. C.

DEATH OF PROFESSOR SEYMOUR.—The death of Thomas Day Seymour, which occurred on December 31, 1907, is a serious loss to the world of archæologists, as well of Greek scholars. Born in 1848, in Hudson, Ohio, where his father taught Greek in Western Reserve, he was early surrounded with scholarly influences. Two years after his graduation at Western Reserve, in 1870, he began teaching Greek in his alma mater. From 1880 until the time of his death he taught Greek at Yale. The degree of Doctor of Laws was granted him by Western Reserve University, by Glasgow, and by Harvard.

The soundness of his scholarship was widely recognized among scholars. His most elaborate work was *Life in the Homeric Age*, published in 1907, which was the result of years of close study, and is a fitting climax to his life work.

As president of the Archæological Institute of America he was prominent in the field of archæology. He was also chairman of the

managing committee and trustee of the American School of Classical Studies at Athens; associate fellow of the American Academy of Arts and Sciences in Massachusetts; honorary member of the Society for the Promotion of Hellenic Studies of London, and of the Archæological Society of Athens.

FRAGMENTS OF BIBLE MANUSCRIPTS.—Among the papers read before the meeting of the Archæological Institute of America at Chicago was one by Prof. H. A. Sanders, of the University of Michigan, in which he described the portions of 4 manuscripts of the Bible now in the possession of Mr. Charles Freer of Detroit. One contains Deuteronomy and Joshua; another, the Psalms; another, the 4 Gospels; the last, parts of the Epistles and of Acts. The readings of this last will probably be of great value, wherever they can be deciphered. The manuscript of the Gospels is from the V or VI century and has many valuable readings. The most important were evidently known to St. Jerome. One is here quoted:

"And they answered, saying that this age of unrighteousness and unbelief is under the power of Satan, who does not permit the things which are made impure by the (evil) spirits to comprehend the truth of God (and) His power. For this reason 'Reveal thy righteousness now,' they said to Christ, and Christ said to them: 'The limit of the years of the power of Satan has been fulfilled, but other terrible things are at hand, and I was delivered unto death on behalf of those who sinned in order that they may return to the truth and sin no more, to the end that they may inherit the spiritual, indestructible glory of righteousness (which) is in heaven.'"

Scholars have long held that Mark xvi 8-20 was a later addition, borrowed from some other Gospel. This new manuscript, perhaps, gives the original form of the passage which, mutilated, was added to Mark.

JEWELS OF TA-USERT.—Mr. Theodore M. Davis and Mr. Ayrton, in the course of excavations in the Valley of the Tombs of the Kings at Thebes have opened a tomb in which were the jewels of Queen Ta-usert, the granddaughter of Ramses II, and the last ruler of the XIX Egyptian dynasty. The chamber was filled with clay, which had become almost as hard as rock. This appears to have been a private tomb whither the Queen's jewels were for some reason removed.

The inscriptions on some of the jewelry make it certain that Ta-usert was married to Seti II, the grandson of Ramses II. Some of the objects belonged to the king. For instance, two large epaulets, formed of poppy-heads, hanging from a plate which hangs from a golden bar, bear Seti's name. There is also a pair of silver bracelets on which is a representation of Seti on his throne and the queen before him. A large number of rosettes, inscribed with the names of both,

was among the finds. These were probably attached to the dress by means of a gold stud with a hook. What appears to have been the king's signet ring was found. It has upon it the vulture goddess, inlaid in precious stones, and surmounted by the symbol of the sun-god. Another ring consists of open gold-work, forming the name and titles of Ramses II.

Among the other jewels, all of which belonged to the queen, were hundreds of open-work balls and pendant poppy-heads, which were strung alternately on a series of threads. There were at least 7 finger-rings, 3 of which were set with scarabs, containing the queen's name; two others were double rings with the royal cartouches; another was formed of 4 strands of gold wire and 8 precious stones. Bracelets, ear-rings, small figures of Seti, Apis, and various animals, as well as the circlet of the queen's crown were among the ornaments found.

The foundations of some workmen's huts were uncovered at a little distance from the tomb. Most of them had pots let into the floors, probably for the safe-keeping of money. Rubbish pits in the neighborhood yielded interesting relics, among them a bouquet of papyrus blossoms, stitched in order to keep the petals in place. Some pieces of limestone, inscribed with what seem to be the accounts of the overseers, were dug up.

EXCAVATIONS OF ROMAN WALLS AT PEVENSEY, ENGLAND.—The outer court of Pevensey Castle has been identified as the site of the Roman military station of Anderida. In October, 1906, and again in October, 1907, work was carried on to determine the interior arrangements of this military station. During 1906 about 1¼ acres were thoroughly explored. About 40 bronze coins, from A. D. 254 to 375, were found, pointing to the date of its Roman occupancy as the IV century, though a possible earlier Romano-British occupation may have occurred. The traces of such occupation are in the shape of pottery, but these fragments may have belonged to the native workmen who built the wall. There seem to be other evidences of these workmen in part of an encampment consisting of several lines of wattle and daub huts with hearths of tiles. These are of rough construction, and, therefore, probably are not those of the soldiers. The use of Roman tiles, however, shows that the hearths were not pre-Roman. The fortified site was a clay hill, with the sea on the south and east, and swamps on the north. The Romans cut away the edge of this. On the north they anchored the ground by driving in oak piles; on the other sides they prepared the clay for the wall by puddling. Alternate layers of chalk and flints were placed on the puddled clay. Next was a layer of flints set in hard mortar; on top of that the plinth; and last of all the wall 12 ft. 3 in. thick and 25 to 30 ft. high.

Two of the gates were merely openings, but a third was more elaborate. The passage through the wall in the last case was curved, and broader at the inside end than at the outside.

No traces of permanent buildings were found. Much pottery of various types, but in a fragmentary condition, was found. One fragment of a tile stamped with what seems to be a new form of the CL(assiarii) BR(itannici) stamp occurred. Another tile was found bearing an inscription shown by another example in Mr. Charles Dawson's possession to have read HON AVG—ANDRIA, clearly refers to the Emperor Honorius, and probably to the name of this military station preserved in two forms, "Anderida" and "Anderesium."

ARCHÆOLOGICAL WORK NEAR BATH, ENGLAND.—In June, 1905, experimental trenches were dug at the north end of Lansdown, 4 miles from Bath, and more work has been done since. The field of operations was triangular, including 7 acres. The land slopes toward the south, and is flat except for low banks, forming irregular enclosures. When these banks were cut, they proved to be made of thin stones laid flat, or of rubble. Parts of the foundations of 6 buildings have been found. Probably they were roofed with stone tiles, for a few broken ones have been found pierced with holes for nails. The bases and capitals of some pilasters were discovered. Just below the surface of a mound, built of thin stones laid flat, are a wall and cross walls. South of this a trench 6 ft. deep and 7 ft. wide at the top and 3 ft. at the bottom had been cut through the rock. To the north a similar trench 44 ft. long appeared. Two ft. 8 in. from the surface was a bed of burnt material, 6 to 8 in. thick, and 3½ to 5 ft. wide. Above were two Roman coins, bronze fibulæ, finger rings, and other such objects. Below, animal bones and fragments of pottery were found. The boundary wall was built on a bank of thin stones laid flat. Six feet of the wall was pulled down, and a cutting made through the bank. Under this bank the workmen found the foundation of a building, which extended from this field into the next. There were 3 Roman coins in the bank. Among the finds were a mosaic brooch, fibulæ, amulets, finger rings, tweezers, spoons—all of bronze; iron knives, keys, parts of horsehoes, and an axe. The coins found included one rude British and 234 Roman coins, covering a period of 270 years. Four stone coffins, hewn out of solid rock, were examined. Two of the skeletons were those of females and two of males. Another male skeleton, with no coffin, lay on its side, facing the east, and a woman was found buried face down. Other human skulls and bones were together in a heap. The site seems to have been occupied shortly before the Roman time. Certain curious moulds, found here, may probably be ascribed to the pre-Roman period, and indicate that the inhabitants of the region practiced metallurgy. They are made of the local Lias formation, and appear to be almost unique. The only parallel is found in moulds for bronze ornamented strainers, etc., occurring in Egypt, usually ascribed to the Græco-Alexandrian artists. These, however, are ruder. They seem to have been intended for making handles of *paterae,* or mirrors and small ornaments.

RECORDS OF THE PAST

VOLUME VII MAY-JUNE, 1908 PART III

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Part III

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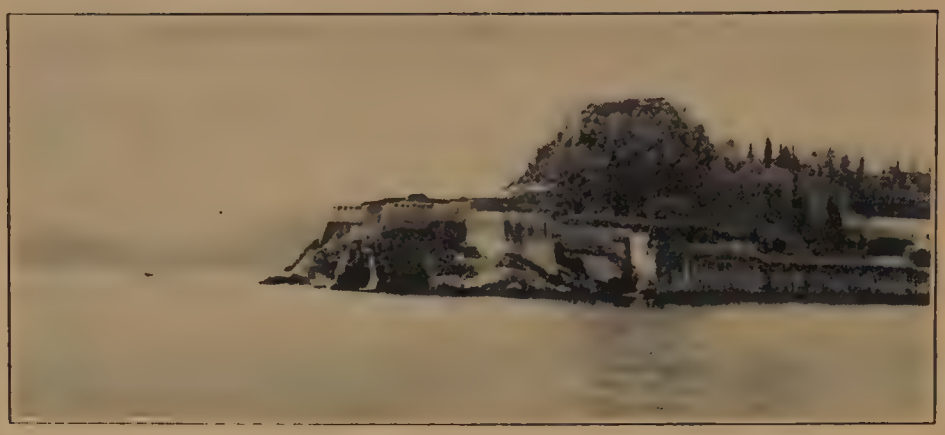


CORFU, GREECE

Photo by F. K. Ball

PORTA GEMINA, FROM THE S. W., AT POLA

ARENA, FROM THE S. W., AT POLA

CHURCH OF ST. BIAGIO AND ROLAND MONUMENT, RAGUSA

DOGANA AND CLOCK TOWER, RAGUSA

Photos by A. S. Cooley

RECORDS OF THE PAST

VOL. VII

PART III

BI-MONTHLY

MAY-JUNE, 1908

THE DALMATIAN APPROACH TO GREECE

AN OLD Roman would have little difficulty in his choice of a route to Greece. As little traveling for mere pleasure was done in his day, naturally the shortest routes were taken. So he would sail from Brundusium, the nearest Italian port to Greece, across the Adriatic to Dyrrachium (the modern Durazzo in Albania), and down along the Ionian shore. Though nowadays there are many other routes from Italy and Central Europe—this, the oldest one, is still in greatest favor. But whatever way we take now, the journey must finally be made by sea just as in Roman days. For Greece, though fairly well equipped with railways, strangely enough is not yet connected with the continental systems. The short link in the iron chain—scarcely a hundred miles around the foothills of Mount Olympus—which would connect Larissa, the northeastern terminus of the Thessalian lines, with Salonike, the nearest point on the Macedonian railway running from Nish in Servia to Constantinople, has never been built, nor is it to be expected that it will be, so long as the present relations between Greece and Turkey endure. Nor is the Thessalian system yet connected with those of central Greece, so that one is still forced to go from the Piræus to Volo by steamer. The traveller to Greece, therefore, when he boards his steamer, feels he is leaving Europe altogether and sailing to another continent; and when he arrives in Greece, he finds this feeling of isolation from the rest of Europe is shared by the Greeks themselves and in a sense far more real. For

they always speak of going to Europe, as if their peninsula were not an integral part of the continent. And if he stays long enough in their midst, he very soon falls into the same way of speaking. With the Greeks themselves, of course, this feeling is inherited, a reminiscence of the actual state of affairs under Turkish rule, when they were cut off from the rest of Europe, if not of a far remoter time when all the influences exerted upon their country were from directions away from the mainland. The Greeks are now practically upon an island, all their commercial dealings with the rest of the world being by sea, just as in antiquity. Railway facilities with the countries beyond the Balkans would dispell this inborn feeling of isolation.

In choosing a route to Greece the past summer, it occurred to me that a most attractive way of approach would be the more unusual one down the eastern shore of the Adriatic, which would afford an opportunity of visiting the historic, though little known towns along the Dalmatian coast. It had always seemed strange to me that so interesting a part of Europe, one so full of associations of centuries of history and yet so remote from the interests of the world of to-day, should attract so few travellers to its shores. And yet there is no lack of fascinating and stimulating accounts of its history, its quaint and picturesque life and beautiful architecture, from the pens of enthusiastic travellers—and who that has once visited this charming part of Europe can help being an enthusiastic exploiter of its many charms and beauties? And withal it is so easy of access, scarcely a day's sail from Venice or Trieste to Zara, its capital, and for three-quarters of a century the Austrian Lloyd Steamship Company has made it possible to explore with ever increasing comfort this neglected coast. And if you are pressed for time and only wish to get a hasty glimpse of it on the way elsewhere, you can most profitably make the whole journey from Trieste to Corfu in a week, on one of the slower steamers of the line, which visits in a most leisurely manner (and you already feel you are in the East, where everything is done leisurely) the more important towns, giving you a few hours' stay on shore at each. Nor need you fear the heat of a Dalmatian summer; for though I had been warned against it, I found it was no more than what I had encountered in Italy, nor as disagreeable as in Greece. The peculiar dryness of the air tempers its effect, and is little worse than what we have to endure at home.

But neglect seems always to have been the lot of this ill-fated country. Even in antiquity it is described by Strabo as a sadly neglected land, and we know that Venice during her long control of it in the Middle Ages, in order to make her hold easier to maintain and better to recruit her armies from the hardy peasantry, purposely avoided every measure calculated to improve the condition of the people, the Venetian senate—incredible as it may seem—even preventing the establishment of schools there and the introduction of printing. Even now, under Austrian control, government officers who are not Dalma-

tians by birth, look upon employment there so far from Vienna as a kind of political banishment, and Dalmatia in official circles is spoken of as the Siberia of Austria. Yet this neglected little country has had an important history and has been the mother of many a great man. It produced three Roman emperors—Decius, Diocletian, and Claudius Gothicus—and as many Roman pontiffs—Caio, Gregory X, and John IV. St. Jerome was also born and reared here as well as Dominis, another scion of the church, no less noted as a scientist than as a theologian. Newton confessed he received his first ideas of the theory of light from this Dalmatian monk, who was the first to give a scientific explanation of the rainbow. Boscovich, a mathematician and scientist of European rank, and Gondola, an inspired though now almost forgotten poet, both shed honor on Ragusa, their native city. These are but a few of the many illustrious names of which Dalmatia is proud. And she has played no insignificant part in the political destinies of Europe and can boast many a glorious triumph in her past. When Kara Mustapha—to mention only one incident—at the second siege of Vienna was threatening to carry the desolating sway of the crescent into the very heart of Europe, it is well to remember how much this small strip of seacoast—its length does not exceed the distance from Genoa to Rome—contributed to keep back the victorious Moslems; for it was principally on Dalmatian soil and mostly with the help of her rugged peasant soldiers, that Venice withstood the Turkish armies. The castles of those glorious days still stand to remind us of her heroism, while those of a still more remote past, like Diocletian's huge fortress at Spalato, or the stronghold of Clissa, which has gallantly defeated many an enemy from the time of the Romans down, are witnesses of her ancient power and glory. And from her peculiar position as the border land between east and west, Dalmatia has always been the bulwark of western civilization, humanity, and learning in southeastern Europe. For though her shore, being inclined toward Italy, and early colonized by Italians, has ever been receptive of western influences, still large increments to her population have come from the east; and though her coast towns are quite Italian, yet the bulk of her people is Slavic. Just over those wall like mountains which form the eastern border of this narrow coast line (and Dalmatia is nowhere over 40 miles wide) is Turkey with all its eastern superstitions and barbarity. A great deal of the strangeness and quaintness of Dalmatia's picturesque life, so fascinating to the traveller, its curious manners and varied costumes, result from this blending of dissimilar influences.

From the earliest times this strip of seaboard has borne the same name and character. It is ever Dalmatia, the province; for though the mother of many republics within its borders, the country as a whole has never achieved independence, but has contented itself with having worked out its destiny under the suzerainty of her more powerful neighbors. First it is the province of Rome, its brave and freedom-

loving inhabitants finally welded into the Roman provincial fabric only after two centuries of determined resistance. After the decay of Roman power, for centuries it was the battle ground of Slavs, Bulgars, Avars, Croats, and Huns, all struggling for its conquest. The old Roman towns were destroyed and their inhabitants took refuge in the coast towns, or founded new ones as at Spalato and Ragusa. And to this day the population of these towns is more Italian than Slavic, doubtless the descendants of the old Roman colonists rather than of Venice, as so generally supposed. In the VIII century it is the province of Constantinople and followed for a short time the fortunes of the Eastern Empire, though the Slavic population of the interior remained largely independent. Nor have the Latin and Slavic Dalmatians ever amalgamated to this day. Gradually the growth of Venice became powerful enough in the IX century to interfere in Dalmatian affairs. But it was only after centuries of constant warfare with Hungarians, Slavs, Genoese, and Turks, time after time losing what had been gained, that finally the all-absorbing power of the Island Republic converted all the country north of Ragusa (though several maritime cities still led an independent existence), together with the islands of the Quarnero, into her most important province, the main reliance of her military power. How firm was Venetian control is still attested by the fact that though only 10 per cent. of the inhabitants of Dalmatia to-day are of Italian origin—the "Bodoli"—still her life, her institutions, and art are Italian yet, while the language of the seaport towns still bears the stamp of the Venetian dialect and the impress of the great mediæval power of the Adriatic is everywhere in evidence still, the effigies of her winged lion visible on many a fortification wall and gate, her palaces and churches the counterpart of those of Venice.

And Dalmatia's allegiance to this great power really never ended until the treaty of Campo Formio, concluded a little more than a century ago, when finally she became a crown province of Austria, under whose beneficent rule she has remained prosperous and contented ever since. Such a record of war, siege, and rapine has been the lot of few other countries. Nor is it difficult to see the cause of the ill fate of this unfortunate country. The barren limestone soil—which Strabo mentioned—compelled the inhabitants to collect into towns near the few tillable districts, which are widely scattered, and consequently made it difficult for town to combine with town against a common foe. And doubtless the old Roman blood and traditions left a love of local independence which also hindered these towns from forming a federation, and so left them a prey to the more compact political organisms of Venice, Hungary, and Turkey. And the perpetual ill-feeling between the urban Latins and the country Slavs who had overrun the country in such hordes in the VI century, a feeling by no means vanquished yet, retarded any union between the two. All these causes operated together in making this unfortunate country the easy prey of neighboring peoples, and are responsible for her unfortunate history.

SPALATO, FROM THE CATHEDRAL TOWER

UPPER KIRKA FALLS FROM THE NORTH

PORTA AUREA IN N. WALL OF THE PALACE

COLONNADE ON WEST OF PERISTYLE

Photos by A. S. Cooley

Like Greece and most other Mediterranean lands, Dalmatia presents to the sea a most desolate and uninviting front. Steep, gray limestone mountains almost entirely devoid of verdure, and bleak wind-swept island reefs parallel with the shore, the remnants of submerged mountain ridges, with only here and there a lonely castle ruin or perhaps a tiny village hidden in some miniature haven, to betoken the presence of man—this is your first impression. But these lofty hills form clear-cut silhouettes against the azure sky, and though so bleak and gray, are now and again bathed in the most delicate violet and rosy hues of the sunlight, and then again take on darkling and lowering shadows in the gathering storm. For the Adriatic has ever been known for its changing moods, since Horace sang of *Auster* as the "*Dux inquieti turbidus Hadriae.*" But this sudden violence of the

oncoming storm need not deter the voyager to Dalmatia's shores, nor need he stand in awe of the

"rabiem Noti
Quo non arbiter Hadriae
Major, tollere seu ponere vult freta."

for the whole coast is so protected by islands that his ship is seldom exposed to the fury of the sea, but rides along on even keel in lea of the island chain, and it is only in winter that the anger of the *Bora* is to be dreaded, while in summer only now and again the heat of the gentle *Scirocco* is to be feared.

We, too, experienced the fitful moods of this fickle sea, as one morning last July we sailed from Trieste for Zara on our long voyage down the Adriatic. As the ship left the quay and turned her bows southward along the Istrian shore, the sky was dark with leaden clouds while a fine, penetrating rain was driving against us as we beat into the squally wind, and the sea was flecked with foam. We had eagerly hoped to get a view of the retreating city, so grandly situated on the very shore with its wonderful background of mountain peaks—its position recalling though surpassing in beauty even that of Genoa. But soon it faded away in the mist and we already seemed far out at sea, while our first day's experience on Dalmatian waters bade fair to be a disappointment, for such signs of weather on any other sea would have been deemed sure indications of a settled and lasting storm. But not so on the Adriatic. Within an hour all was changed; the rain had ceased, the murky clouds had begun to lighten, and soon, as if a mighty curtain had been drawn aside, the neighboring coast of Istria was disclosed to our sight, with its lofty mountains here and there sparkling in the sunlight and lighting up the most beautiful tints of purple and violet as we sailed along in full view of her many pretty villages nestling at their base. Soon we were entering one of her harbors, that of Pola—the *Pietas Julia* of the Romans—near the southern end of the peninsula at the mouth of the Bay of the Quarnero. Few cities can boast so grand a haven as this, protected on the north and east by fortified hills rising up from the city streets, and on the west by a series of fortified islands, a truly impregnable spot, which the Austrians, taking the hint from Napoleon, have utilized as the chief station of their fleet. Here one feels he is in the presence of the bygone power of Rome, for as the ship sails on into the harbor, the splendidly preserved Roman buildings, still the glory of the modern town, break upon the view, in striking contrast to the modern fortifications and warships, evidences of the present-day military importance of the place. Most striking of all is the huge oval amphitheater with its peculiar square corner towers rising up from the shore just to the north of the town. It were wrong to call this splendid relic a ruin, for its exterior is in almost perfect preservation. On entering, however, we find the inte-

rior has utterly disappeared, for it, like its sister Coliseum at Rome, has been used as a quarry; but owing to an accidental difference in construction its outer wall has not suffered. The interior masonry was connected with the exterior by means of wooden beams instead of the usual stone vaulting, making it possible for the interior parts to be removed without detriment to the outer ring, which still stands to its ancient height of almost a hundred feet. So it looks to us now as we enter the harbor just as it did centuries ago to the Roman bearing in with his galley, and this, together with the old bastioned walls and other visible evidences of the past, irresistibly transports us back to the spell of Rome. But on entering the town, everything reminds us of Italy—streets, architecture, and people are all Italian in character. The population here is indeed much more Italian than Slavic—the latter element being mostly composed of refugees from Dalmatia, farther south. Indeed, the Triestines boast themselves to be "*piu Italiani degli Italiani,*" and Pola and the other cities of the Istrian peninsula could say the same.

After a short stop in Pola we are again underway for Zara, touching at Lussin Piccolo on the way, one of the two ports of Ossero, which with the neighboring Veglia—once an island republic—formerly belonged to Dalmatia, though now attached to Istria. But Dalmatia still controls Arbe, the third important island in this vicinity in Roman and mediæval times, the birthplace of Pope Gregory X and Dominis. In the dusk of the evening we sail through the straits of the *Quarnerolo,* among the perfect network of islands which literally choke the way. These islands are innumerable, some being only points of rock sticking up through the water. Now we are sailing among the retreats of the famous Dalmatian or Narentine pirates, who for centuries infested this part of the Adriatic. Even in Roman days, pirates held possession of these island fortresses. In the IX century, after Charlemagne relinquished his short-lived authority over Dalmatia, they had become a veritable scourge of this part of the Mediterranean; in the year 1000 the Venetian Doge, Orseolo II, made a determined war upon them and concluded terms with them at Zara, but the Dalmatians were soon again in arms and the warlike Doge besieged their chief stronghold of Lagosta. After its capture, he became Duke of Dalmatia, and it was in commemoration of this signal victory that the "*Sposalizio del Mar*"—kept up through so many centuries—was instituted. Again, in the XVI century, the old scourge broke out again. In 1540 Venice had made a treaty with the Turks, according to which all Dalmatia except the coast towns, was handed over to the Moslems; a Turkish governor was put in charge of the castle of Clissa near Spalato, and its Slavic inhabitants took refuge on the islands of Segna in the Quarnero, and became known as the Uscocs, the most bloodthirsty pirates of Europe, giving constant trouble to the whole neighborhood until they were finally dispersed in 1617, since which time all these islands have been peaceful enough.

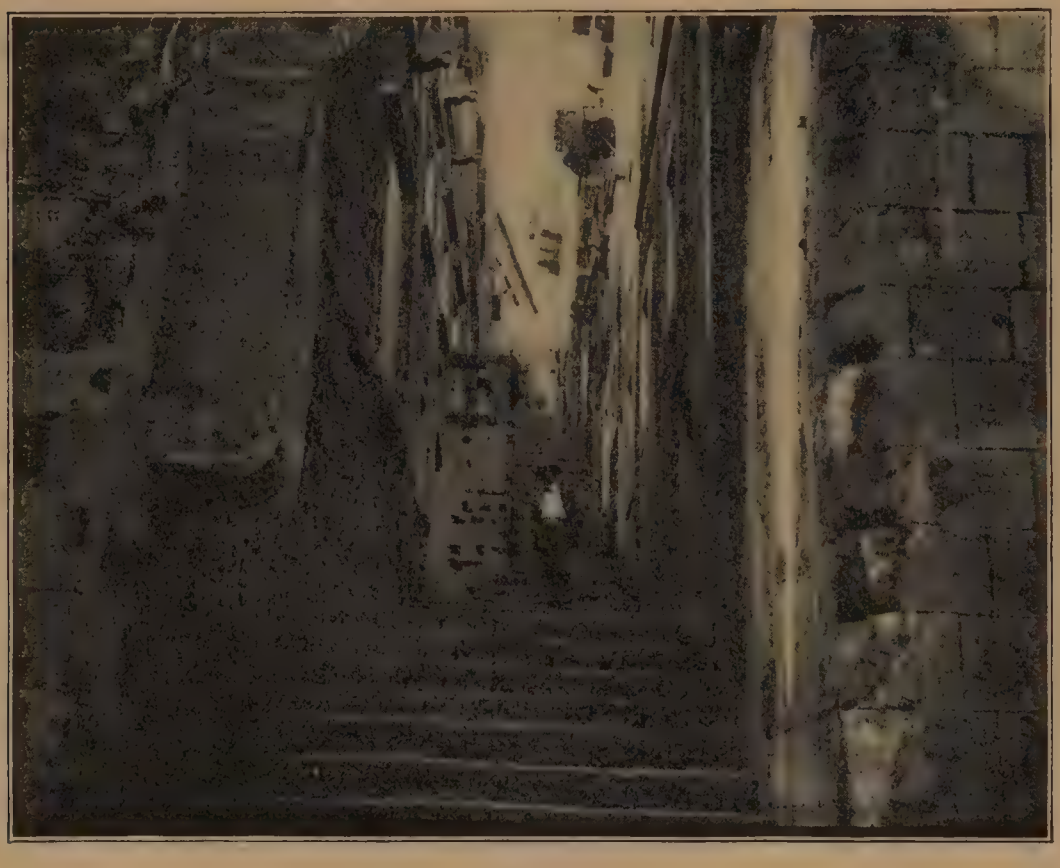
On awakening next morning, we find ourselves at Zara, the modern capital of the country. Here we get our first real impression of Dalmatia. To one familiar with north Italian towns and especially Venice, there is little that is distinctive in the outward appearance of this quaint little town of scarcely 12,000 people. For it has the same network of narrow streets, most of which are only broad enough for pedestrians, the same tall houses with pointed doorways and grated windows below, and the same church architecture. Its fortification walls—now planted with trees—were built by an architect of Verona, the Porta di Terra Ferma being a copy of one in his native city; the cathedral is Romanesque, very similar to one in Pisa, while the church of St. Donato (the municipal museum now), has an interior recalling that of the Baptistery in the same town. The tiny town even boasts a *Ghetto* and the little Piazza is flanked by a hall of justice, cathedral, and cafés, and as in Venice here are marble Corinthian columns, with the remains of a sculptured Lion of St. Mark still upon one. Though an important town even under the Cæsars, Zara is better known from its later history, especially from its famous five-day siege at the beginning of the fourth crusade by Venetians and French, when the Doge, Enrico Dandola, turned the army of the Cross, while on its way to Jerusalem, against this Christian town. As a penance he built the present cathedral. But the chief interest of Zara for us to-day is its wonderfully picturesque life. Though the population here as in these other coast towns is predominantly Italian in descent and language, the neighboring country people are mostly Slavic, and their costumes of a most indescribable and engaging variety, give a strange and picturesque character to Zara. Such a variety of types of faces and such queer looking costumes as are to be seen in these narrow streets, scarcely have their counterpart even in Dalmatia, and surely nowhere else. Not only does each surrounding district have its own peculiar fashion, but each individual varies it to suit his own taste, and in the choice of brilliant colors and fantastic combinations—scarlet, blue, and orange are everywhere seen—the men show as much barbaric taste as the women. It was a most agreeable hour we spent seated in the Piazza before a cafe sipping our Maraschino—the cordial made from the marasca or wild Dalmatian cherry is the chief export of Zara—and watching the fantastically dressed natives. The dress of the peasant man, if he does not wear European garb in unheard of colors, such as trousers of blue or green and shirts of red and yellow, might consist of a wide-sleeved shirt of any bright color with tassel fringes, over which is a double-breasted vest richly ornamented with braid of gold or silk, and at the waist a heavy leathern girdle, as a receptacle for pipes and pistols (and no one feels he is properly dressed without one or more pistols); dark woollen trousers, extraordinary full and wide at the hips, tapering to the ankle, and with a very long and bagging seat; slippers of skin and a little brimless red woollen cap stuck rakishly on one side of the head completing his simple costume. It would

be far more audacious for me to attempt to describe the more complicated and varying dress of one of these peasant women. Her hair might be neatly tied up with bright ribbons and surmounted by a richly embroidered cap, over which is placed a white or colored kerchief with worked edges tied under the chin; or she might wear a soft white linen cap with puckered crown and narrow ruffled brim. A long and shapeless coat of dark blue or white, richly braided or beaded, with red bands around the wrists and the upper part of the full, flowing sleeves, is worn loosely over a coarse linen shirt negligently open at the throat. The heavy skirt of wool—and it is incredible how they can endure such heavy garments in the heat of a Dalmatian summer—either white or red or blue, falling just to the ankle, and displaying the woollen leggings and moccasins, has a richly colored or embroidered apron over it, and is held in at the waist by a wide leathern or colored cloth belt, in whose folds may also be seen knives or whatever other useful article she may be carrying. According to her ability or fancy is she also bedecked with jewels, chains of colored glass beads, huge pendant earrings and massive metal rings—withal forming a most delightfully picturesque and strange appearance. Some of the peasant maidens are really beautiful with their expressive eyes and regular features, though the drudgery of their hard lives makes them age before their time. An artist would surely be carried away by these oriental street scenes, and would find these captivating country folk far more attractive to paint than the hackneyed peasant types of Holland or Brittany.

A few hours from Zara, through a channel protected from the sea by a chain of islands, and we are in the harbor of Sebenico. A tortuous and seemingly unnavigable strait leads into the large lake-like bay, the town at first invisible, but finally disclosed at the farther end, prettily huddled between the shore and the mediæval fortresses, superimposed the one above the other on the rocky wall behind. Series of stone stairs, instead of streets, lead up the hillside, and the stone dome of the cathedral—the great attraction of Sebenico—is conspicuous halfway up the incline. Though a closer acquaintance with this busy port would have repaid us, we did not land, as the ship stayed here only a half-hour to deposit freight; so we had to content ourselves with viewing the picturesque scene from the harbor. Those who visit the Falls of the Kerka—the ancient Titius, the boundary stream between Dalmatia and Liburnia in the earliest times—generally make the excursion from here. The way to this, the grandest natural sight in the country, leads inland about 12 miles, and is said to give one an idea of the wildness and desolation of the interior.

Sailing along a rocky and arid shore, unprotected by islands from the full force of the "*inquietus Hadria*," we next approach Spalato. Not a village or house for miles, only the desolate and limestone cliffs, with now and again a ruined fortress, in keeping with the dreary coast, crowning some promontory. But soon we round a long projecting

headland and Spalato, the "city in a house" breaks upon our view, grandly built on the shore facing southwards. Here the all-compelling interest for us is the ruined palace of Diocletian, the long facade of which, notwithstanding quays and intervening houses, rises all along the waterfront, towering above all. This—the grandest relic of Roman architecture—is the ruin of the palace or villa of the soldier emperor, who preferred to end his days here in quiet to retaining the Roman purple. The delights of country life sung three centuries before by Horace were here exemplified in this royal gardener, and when his colleague Maximian—who was too weak to wield the Roman scep-



STAIRWAY STREET IN RAGUSA

Photo by Dr. Hyde

tor alone—came to Salona to exhort him to resume the government, Diocletian gave his answer in these famous words: "If you could only see the cabbages I have planted with my own hands, you would never speak of my resuming the purple."[1] The huge ruin with its Cyclopean walls extending far along the shore, even now is an impressive sight. An idea of its enormous size can be formed by the fact that despite the large areas within its walls, occupied by ruined temples and arches, a fair-sized amphitheater and Mausoleum (the modern Duomo), whose dome is second only to that of the Pantheon in dimen-

[1]Utinam Salonis olera nostris manibus insita invisere posses, de resumendo imperio non iudicares.

FORTRESS OF CLISSA NEAR SPALATO

ARCH AND COLUMN ON S. FACADE, BETWEEN PORTA AUREA AND S. E. TOWER

CASTELNUOVO, IN THE "BOCCHE" OF CATTARO

SOUTH FACADE OF PALACE NEAR S. E. TOWER

Photos by A. S. Cooley

sions, and a public square with its municipal buildings, still half the modern town—and Spalato with its 28,000 inhabitants is the most flourishing town in Dalmatia—is packed away inside. The streets, of course, are narrow and dark, often no more than 6 ft. across, and the houses and palaces are tall and gloomy, at times rising to the height of 6 or 7 stories. And the great contrast between the mighty Roman arches of the old buildings and these narrow mediæval streets, which they cross in a single span, is most striking. Even on the top of the outer walls are perched two and three story houses, while over one of the ancient gates, 80 ft. in the air, is a goodly sized Christian church. The villa was laid out like a military camp in the form of a rectangle with corner towers and gates in the middle of the sides flanked by

octagonal towers; the intersecting streets divided the interior into quarters, the southern two along the sea being occupied by the palace itself, with its accompanying public buildings and temples. The *Porta Aurea,* in the north wall toward Salona, is a gem of architectural beauty, and is still in excellent preservation. The *Porta Argentea,* the marine gate, is the smallest though plainly visible from the harbor; and through it we can fancy the gilded barge of the aged and decrepit emperor often passed within. Few other remains of Roman architecture surpass this royal fortress in huge and imposing dimensions. And the Arcade of the Peristyle (the present Piazza del Duomo) is of the highest importance in all architectural history, for this affords the first instance of arches springing directly from column capitals without the usual intervening entablature, an invention which may be said to have made all Byzantine and Gothic architectural forms possible. It was in 285 A. D., long before the abdication of Diocletian, that he began building this villa. For three centuries after his death, it seems to have been unoccupied; for it was not until 639, when the Avars drove away the inhabitants from the neighboring Salona, that the refugees sought protection within these walls, and this was the beginning of the present city of Spalato, named from the Palace.

On the other side of the promontory on which it stands, at the head of an arm of the sea, stood Salona, the birthplace of Diocletian, and the most important city of Dalmatia in Roman days (unless we except the capital Dalminium). The 3 or 4 miles walk to the beautiful site—once a port, now some distance back from the sea—scarcely repays one, for only bits of the ancient town wall and gates have survived, just sufficient to indicate its oblong form, the *longae Salonae* of the poet, Lucan, besides some insignificant ruins of theaters and baths. But two miles farther is the famous fortress of Clissa, in its almost impregnable position on an isolated rock in plain view from Salona. A more picturesque spot could hardly be imagined. Another pleasant excursion from Spalato is to Traü, perhaps a dozen miles along the shore to the northwest, situated on a tiny island. This little town—for it boasts only 3,500 inhabitants—has the distinction of never having fallen into the hands of the Turks, even when in the XV and XVI centuries, practically all Dalmatia was Turkish. Within the walls of this old Roman town (it is the Tragurium of Pliny, famed in antiquity for its marble), dwells the very spirit of romance. Its crooked streets and alleys, though so narrow and dirty, furnish never ending attraction to the traveller who is in search of what is quaint and strange. Indeed the present has laid a most gentle hand upon this mediæval town, where one feels so far removed from the busy interests of the modern world. But apart from the interest of its romantic associations, Traü has little else to boast. The Cathedral, however, is very beautiful—perhaps the most beautiful in Dalmatia. We are also reminded that a discovery most important in the history of literature was made in this almost forgotten town; for, in 1665, the fragments of the well-known *Satiricon* of Petronius, the *Arbiter Elegantiarum*

of Nero's court, containing that gem of all ancient humor, the laughable account of Trimalchio's Dinner, were found here. This whole region about Spalato—the royal city itself, the ruined site of Salona, the historic castle of Clissa, and the tiny island city of Traü—all teems with romance. Not infelicitiously did Shakespeare place the scenes of "Twelfth Night" here at Spalato, a "city of Illyria."

An all night's sail and we arrive in the lovely harbor of Gravosa, which is now the port of Ragusa, of all Dalmatian towns the one most replete with historic interest. As it is only about two miles over the intervening promontory of Lepado to Ragusa, we decided to go by foot. The way lay amid semi-tropical gardens and charming villas, and afforded exquisite views back into the mouth of the green *Val d'Ombla,* with its setting of dark cypress trees forming a veritable paradise in the surrounding limestone waste. Soon we ascend by winding woodland paths up to the tiny chapel of St. Biagio (or Blasius, the patron saint of Ragusa), perched high over the sea on the topmost cliff. From here we look down upon the once famous harbor and town with their background of gray cliffs which rise up from the streets like a gigantic protecting wall. In the foreground is the wooded island of Lacroma, with its castle and church built by King Richard, Cœur de Lion, when he landed here after being shipwrecked on his way home from the Holy Land. Descending the other side of the promontory we soon find ourselves within the walls of Ragusa. This little town, whose early founders traced their illustrious descent back through the Romans to the Greeks—Cadmus and Hermione being their fabled ancestors—and which enjoyed during its checkered career the friendship of Byzantine emperors, Slavic bans, Romans pontiffs, Hungarian kings, and even Turkish sultans, keeping its independence almost continuously from the end of Roman days down to Napoleon's time, still, though its ancient glory has passed away forever, forms the chief attraction of Dalmatia. The historic part played by this narrow strip of land between sea and mountain—and it is so narrow the coast road passes through the town from gate to gate—has thus been happily epitomized by Freeman: "Those hills, the slopes of which begin in the streets of the city, once fenced in a ledge of Hellenic land from the native barbarians of Illyricum. Then they fenced in a ledge of Roman land from the Slavonic invaders. Lastly, they still fence in a ledge of Christian land from the dominion of the infidel." Coming gradually into prominence during the last years of the decline of Rome, its early history a continual strife with Venetians, Saracens, and Hungarians, as well as with the ravages of fire, pestilence, and earthquakes, it finally in the XV and XVI centuries rose to a position of great importance, the bulwark of learning and civilization in eastern Europe. It came to rival even Florence in its literary life, and Genoa and Venice in wealth and commercial activity; its land trade (especially with Turkey), was enormous, and its merchant ships, or "Argosies" (Ragusies), were known not only in the ports of Italy, Spain, and the Levant,

but in England and India, and even in America. But how different now! It would seem as if this ancient city, still encircled by its old walls even yet in almost perfect condition, with armed sentries still guarding its towers and gates, this city where nothing is new and yet all that is old shows so little of decay, had been quite forgotten by the progress of the past few centuries, and was only a part of the Middle Ages surviving down into the XX century. Nowhere else in Dalmatia do you feel so under the spell of things past and gone; no other of these quaint old towns seems to have so little contact with the present. You feel this is a city whose greatness was of yesterday; these huge walls with their sentries seem little adapted to resist a modern enemy; and this harbor, once one of the most important in southern Europe, is now no longer suited to modern requirements. But though Ragusa's prosperity is gone, though her commerce, which outlived both that of Venice and Genoa, is now like theirs a thing of the past, and though her population has dwindled to less than a fourth of what it once was—still, even now, there is an air of former power and prosperity hovering about the deserted streets, and when one reflects upon her present altered condition, it is impossible to restrain a feeling of lively regret for her fallen greatness, and of real respect for this courageous little state, which was able to withstand the almost irresistable influence of Venice for centuries and keep her independence through the sheer ability and genius of her citizens. For despite her martial appearance, we feel it could not have been these walls alone which kept her integrity, and we are forced to conclude it must have been her ability in diplomacy quite as much as her strength of arms which kept her from falling a prey to the encroachments of both Venetian and Turk.

The first treaty of peace between a Christian state and the infidels was concluded in 1364 by Ragusa with the Sultan Murad I. Her relations with Venice must have been very close; for though the winged lion, so prominent elsewhere in Dalmatian towns, is not in evidence here, still Ragusa's institutions and laws, her language, and her art were all modelled after those of her sister republic. The same aristocratic form of constitution and division of the population into nobles, citizens, and artisans obtained in both city states; the Doge had his counterpart here in the *Rettore*—though the Rector only held office for a month; the Venetian Council of Ten corresponds to the Ragusan *Gran Consiglio*. The little Piazza at the end of the Corso, still the chief street, yet preserves the Palazzo Rettorale, or Residence of the Rector, the ancient *Dogana* or Custom House, and the old Mint; and here is the Romanesque Duomo and the curious old clock tower. Even as St. Mark's, this square is in possession of innumerable pigeons, which are likewise kept by public charity. The long, narrow streets, with their lofty houses, recall those of Venice and the other Italian towns, and the curious stairway streets up the lower reaches of *Monte Sergio*, with the residents of the neighboring houses and shops seated at their doorways at work, and the ragged though pic-

MORLACH WOMEN ON THE ROAD NEAR CASTLE OF CLISSA

LOGGIA AND CLOCK TOWER FROM N. W., TRAU

CATHEDRAL FROM THE LOGGIA, TRAU

RECTOR'S PALACE FROM N. RAGUSA

Photos by A. S. Cooley

turesque children playing about, have their counterpart in Naples and Genoa. The historic *Corso*—till the XIII century an arm of the bay separating the seaward ridge once Ragusa proper from the early Slavic settlement of Dubrovnik (the present town answers indifferently to either name), at the foot of the opposite cliffs—though still a fine street, no longer appears so imposing as it must have done before its palatial mansions were overthrown by the terrible earthquake of 1667. For we are reminded, that though the Republic did lose much of her prestige by losses incurred in helping Charles V in his wars, and the flower of her fleet in the fate of the Armada, still the final blow to her prosperity never was dealt by the hand of man. In the pavement of the *Corso* are still many visible reminders in the marble slabs and

fragments of palace fronts, of that awful catastrophe in which the "rector of the republic, five-sixths of the nobles, nine-tenths of the clergy, a Dutch ambassador with his suite of thirty-three on his way to Constantinople, and six thousand citizens were buried," a blow from which the proud little state was never to recover. The day which I spent wandering about these quiet streets, entering the almost deserted shops and visiting the once busy state buildings, was one of the fullest and most interesting I have ever enjoyed anywhere in travel. As I stood watching the pigeons fluttering above the piazza, reflections upon the vanished greatness of this historic old town came crowding fast upon me. Such feelings of reflection mingled with regret one cannot here repress, feelings which in Venice or Rome are so easily vanquished at times by the present day interests of those cities. But here there is little to break the spell of bygone times; the exterior of the city looks to-day just as it did in the days of its prosperity; the streets, the churches, the public buildings, and the harbor are all as of yore—but the life has gone from them, and no new interests have taken the place of those that have vanished. It is a city of yesterday, and within these mediæval walls and in these quiet streets the present seems far away and intangible.

On returning to Gravosa, we found the Austrian boat which had brought us thus far on our journey, had already departed, so we embarked on a steamer of the Hungarian-Croatian Line for the short 3 hours' sail to Cattaro, the last city of Dalmatia, on the Montenegrin border, and the capital of the southernmost of the 4 political divisions, or *circoli,* into which the modern province is divided. Here the unrivalled approach through a series of almost landlocked bays, or *Bocche,* each in turn surrounded by hills and mountains, furnishes the chief interest. Can any other city of Europe boast such an imposing and beautiful haven as this of Cattaro? Here is scenery of such boldness as to recall that of some Norway fjord, or the steep mountains around the southern end of the Lake of Como. And as you sail in from bay to bay, the effect of its grandeur grows and your surprise and wonder increase, as the mountains become loftier and bolder. First we sail into the outermost harbor, that of Castelnuovo, with its like named village picturesquely situated at the farther end at the base of an amphitheater of hills; thence through a very narrow strait called *La Catena,* "the chain"—where once the Cattarenes defended themselves against the Venetians by drawing a chain across, just as the Athenians used to do at the Piræus—we enter the *Bocco* of Teodo with still higher hills around us; then into that of Risano—which recalls the Roman name of the whole harbor, the *Sinus Rhizonicus,* where the brave Queen Teuta, of Illyria, finally took refuge when the Romans first came into conflict with the Dalmatian coast in the III century B. C.—with its mountain ring rising 3,000 or 4,000 ft. above us; and finally we are in the last, the Bay of Cattaro itself, the largest and grandest of all with its grand setting of bare and precipitous rocky walls all about us, mountains reaching a height of 5,000 ft., seemingly

ROAD UP THE CLIFFS TO CETIGNE IN MONTENEGRO FROM CATTARO
Photo by Dr. Hyde

inaccessible, and from their dark and lowering color well meriting their sinister name of *Monte negro,* or black mountain chain. But apart from its glorious approach, Cattaro has but little else to recommend itself to the interest of travelers. It is most curiously situated, being crowded on to a narrow strip of shore between the water's edge and the precipices of limestone mountain called Lovcen. Just over the town the old fortification walls seem to cling to the cliffs, leaping from rock to rock till they culminate in a fortress perched high on a needle-like projecting crag, the seemingly perpendicular face of the mountain towering high above all. Porphyrogenitus, in his account of the place, says it is surrounded by such high mountains that the sun only reaches it at the height of summer. In winter icy winds and dense cold fogs sweep down from these lofty heights, while in summer the confined air at their base makes the town a veritable oven. After Zara, Spalato, and Ragusa, the deserted and lifeless town offered little attraction. Though once a republic, too, strong enough in the XIII century to conclude a treaty on equal terms even with Venice, one is not here filled with reflections on a glorious past. Its buildings are far less interesting than those of other Dalmatian towns, its streets are narrow and dirty, and its public square unimposing and dreary. Till very recently it did not even boast an inn where a passing traveller might find enter-

tainment. Though Italian is understood by the better class, the Italian influence, so noticeable elsewhere in the coast towns of Dalmatia we had thus far visited, seemed now to have been left. Everything had a Slavic impress, language, costumes, and physiognomies. The dress of the Montenegrins, who have a bazaar outside the city gates (they are not allowed to sell their goods within), was especially attractive.

With the little daughter of the inn keeper to guide us, we strolled about the deserted streets, but soon made up our minds to spend the time at our disposal in driving up the famous Cettinje road. This is a veritable marvel of road making skill, completed at great expense by the Austrian government in 1890, to connect the port of Cattaro with the Montenegrin capital, and leading up over a pass of Lovcen. In a conveyance more comfortable and speedy than any one could have supposed from its shabby appearance, we first drive over a level stretch of ground to the base of the barrier cliff so visible on entering the harbor. The road runs through vineyards and gardens of all kinds of semi-tropical fruit trees, oranges, lemons, pomegranates, figs, and aloes. Soon we begin the long ascent of the mountain to the summit of the pass four thousand feet above us, the road winding up the slow incline in twenty-five or more zigzags over a distance of twenty miles, an ascent so gentle that our little ponies could run almost all the way. The views of Cattaro and the Bocche from this incomparable drive, as they sink ever deeper and deeper below us, until at last when we had reached the summit, they seemed at our very feet, were indescribably grand. Such famous drives as the one near Amalfi, or the *Via Cornice* above Leghorn, or that in Acarnania leading to Arta, with its superb views of the Ionian Sea, cannot rival this. It was already evening as we began the long descent, and the many twinkling lights of Cattaro and the ships in the several harbors, as the darkness slowly fell, seemed to be the reflection of the starlit heavens. It was nearly midnight when we were again at the wharf, and we immediately embarked on another Austrian boat which had arrived during our absence, to continue our journey down the Albanian coast to Corfu and Greece.

WALTER WOODBURN HYDE.

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PALÆOLITHIC IMPLEMENT FROM BUNGAY, ENGLAND.—Mr. W. A. Dutt reports discovering 4 ft. below the surface, in a gravel pit, on the common at Bungay, in the Waveney Valley, a small, well-worked implement which, if its Palæolithic character is established, is the first that has been found to keep company with the historic implement of Hoxne.

LOCAL BOUNDARY STONE NEAR MARSOVAN,
ASIA MINOR

BOUNDARY STONES IN ASIA MINOR

THE exceedingly interesting article on *Babylonian Boundary Stones,* in the January-February number of RECORDS OF THE PAST, prompts one to remark that Asia Minor quite certainly had similar boundary stones. Professor Sayce, lecturing at Oxford in May, 1907, on *Social Life in Asia Minor in the Abrahamic Age,* showed from cuneiform tablets, which he had deciphered, that about 2250 B. C. there was an outpost of the Babylonian Empire, manned by Assyrian colonist soldiers, at "Kul Tepe," hard by the Halys River, near the present Cesarea Mazaca. Professor Winckler's discoveries have connected the Hittite civilization, that early overspread our great peninsula, with that of Mesopotamia. An important religious and social institution, established on the banks of the Tigris and Euphrates, would probably have some counterpart, however crude, among the mountain gorges and wind-swept plains of Asia Minor.

Not far south of Gurun, which was a Hittite city, there still stands a huge Hittite lion carved in stone, and called the boundary between "Arabistan" and "Anatolia," that is between Syria, where Semitic in-

fluences prevail, and Asia Minor proper, where Semites have never obtained a permanent foothold. It is very nearly at the point where Arabic-speaking and Turkish-speaking peoples meet, and it is right on the water-shed between Mediterranean and Black Sea streams.

Two rough-hewn stones in this Marsovan plain I take to have similarly marked some local boundary. Each consists of a block of stone, coarsely cut four square to represent the bust of some person, probably regarded as a god, with a neck, formed by a double crease cut around, and a head above. The face of one has been cut away by some hand, but it looked directly toward a sharp hilltop not far away, which may have been regarded as the abode of the local divinity, in whose name the boundary stone was reared, and under whose protection it stood sacred. The stone is now beside an important highway, and marks the boundary between two fields. In the other stone, seen in the accompanying picture, the coarse features remain as they were when cut—nobody knows when. The villagers call it a relic from the time of Noah, and regard it with great respect though not as a divine representation or habitat. It stands on the crest of a ridge about midway across the plain from north to south, some 6 miles from the mountains in each direction, and is on a water-shed parting the rainfall toward the foothills on the two sides. It is the boundary between the lands, held more or less on the communal system, belonging to the two Shia Turkish villages, Sary Keuy and Karadja Tepe. It marks the junction of several roads, the most important of which runs from Samsoun, ancient Amisus, on the Black Sea to Cesarea Mazaca, but the veneration paid it has kept it from being pounded into fragments for use as paving. It contains no inscription, but it has been treated, possibly from times earlier than those of Moses, in the spirit of the solemn word: "Cursed be he that removeth his neighbor's landmark. And all the people shall say, Amen." Another local view regards these as "covenant stones," which is quite in keeping with the supposition that they were erected for the purpose of defining boundaries.

G. E. White.

Anatolia College, Marsovan, Turkey.

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JEWISH PETITION FOUND ON ISLAND OF ELEPHANTINE.—On the Island of Elephantine there was found in 1907 a petition of the Jewish community to the Persian governor of Judah entreating him to use his influence to obtain permission for the rebuilding of their temple. The date is 408 B. C. The temple in question seems to have been different from the ordinary Jewish synagogue, for it was provided with an altar for burnt offerings, meat offerings, and frankincense.

TROJAN ARCHER, PERHAPS PARIS OF TROY
AEGINETAN MARBLES NO. 18*

THE BAVARIAN EXPLORATION OF AEGINA[1]

REINHARD KEKULÉ has called the carved lions of Mycenæ "the sentinels at the entrance to the history of Greek art." The Æginetan marbles at Munich are the frontispieces of that sanctuary. The age of Miltiades and Themistokles lives just as surely in those early V century sculptures as the age of Perikles breathes in the Parthenon marbles. Very few other examples of pre-Pheidian statuary were known until 30 years ago. In this sense the Æginetan figures reigned supreme for 60 years, from their arrival in Munich (1818) to the publication of the pediment groups

*The illustrations accompanying this article are from engravings in Blouet Expedition de Moree, vol. III, and we are indebted to the Art Institute of Chicago for the use of the blocks.

[1] *Ægina. Das Heiligtum der Aphaia.* Unter Milwirkung von Ernst R. Fiechter und Hermann Thiersch herausgegeben von Adolf Furtwängler. Published by the Royal Bavarian Academy of Sciences, Munich, 1906. Vols. I and II, 4°, 130 plates, 1 map, 6 supplementary plates and 413 inset cuts. Price, 120 marks.

discovered at Olympia. Another decade went by before the Greek government's excavation of the Akropolis revealed the beauties of VI century Greek sculpture. It is true that the origins of Hellenic art have never captured the general public. The improbable pen of Oscar Wilde is the only poetic one that seems to have dwelt on King Louis I's Æginetan statues even for the space of two lines:

"At Munich, on the marble architrave,
The Grecian boys die smiling."

The higher criticism denies that the proverbial Æginetan smile was meant for one.[2] But no matter. These antique soldiers die as soldiers should, and the author of *Reading Gaol* has read the ancient sculptor's meaning better than some archæologists.

Schooled criticism does not emerge precisely triumphant from a bath in Æginetan waters. The Bavarian reëxploration at the ruined Doric temple has taught us a cruel, but necessary lesson on the helplessness of æsthetic critique when it attempts the interpretation of incomplete documents. Here were 90 years of scholarly intelligence applied to the right reconstruction and meaning of the two Ægina gables, from Cockerell and Haller's discovery of them in 1811 to Furtwängler's revised *Catalogue of the Glyptothek Sculptures* in 1900. Artists and scholars of no mean quality have brought their lights to bear on the problem in the wake of the two architects who discovered them. Farwel, Prince Louis' adviser; Martin Wagner, the eminent sculptor; Thorwaldsen; Hirt, of Munich; Abel Blouet, Architect Von Klenze, Ulrichs, Brunn and Furtwängler, Prachov and Lange, Friedrichs, Wolters, and Overbeck have had their several says. Result, a tolerably general agreement of these high competences on very nearly the same austere, loftily charmless, and rigidly symmetrical reconstruction of both the Ægina pediments. One twelvemonth of inexpensive digging on the site of the Doric temple ruin, lying at an easy forenoon sail from Piræus wharf, has overthrown this splendid consensus of academic authority. Must we class archæology, henceforth, with pseudo-sciences like political economy and finance? No, but even more than heretofore, certainly, with the experimental arts. Reliance was placed too largely, by the XIX century critics of Greek art and history on the Hegelian method of æsthetic and philosophic introspection. The outcome of the Bavarian expedition to Ægina is a brilliant vindication of the contrary inductive and experimental method. The application of this method to the Æginetan problem compels us to acknowledge that hardly one of the illustrious XIX century critics, whose names were given above, had the first glimmer of arranging the Ægina groups as their authors composed them. Cockerell's rela-

[2]See Von Mach, *Spirit of Greek Sculpture*, p. 186, for the doctrine that the early sculptors intended no smile.

tively nearer guesses result partly from his having tried many varied arrangements of both pediments, and partly from his having been governed in his first conjectures by the positions in which he found the torsos. Cockerell and the other critics afterwards neglected this criterion entirely.

GREEK BOWMAN. AEGINETAN MARBLES NO. 13

There was a peculiar fitness in Bavaria's undertaking renewed researches on Ægina, and in its confiding the direction of the new excavation and surveys to the late Professor Furtwängler. Prince Regent Luitpold is the son of the art-loving prince and king who brought the Æginetans to Munich. That royal purchase, and its splendid architectural installation, were one round of the ladder by which Munich climbed to the rank of an art-capital. Furtwängler was

the worthy successor of Heinrich Brunn, not merely in the directorate of the royal sculpture and ceramic galleries, but conspicuously also in the gifts and the industry which he has brought to bear on the critique of the Greek sculpture. Fiechter and Thiersch were the architects of the expedition. Two other men, Doctor Sieveking and Sculptor Baur, have assisted Furtwängler vitally. Baur's miniature models of the 24 gable statues, and the full size restorations with which we hope he will follow them up, are destined to dethrone the traditional Thorwaldsen arrangement altogether. Progressive schools of art, universities, and public sculpture galleries will lose no time in procuring copies of them from the Munich School of Technology.

The contributors to the two volumes on the sanctuary of Aphaia may well be proud of the following contributions to knowledge:

1. The original order and composition of the two gable groups established, in general and in detail.
2. Relics of a third similar group recovered.
3. The designs of three beautiful architectural finials recovered. The attention of *messieurs les architectes* is called to these stunning V century Greek akrokria.
4. The unknown dedication of the temple ascertained.
5. Designs and character of two earlier temple precincts on the same site revealed.
6. Plan and physiogomy of the V century temple and holy precinct cleared up.
7. The political, commercial, religious, and art history of Ægina vividly supplemented by the minor finds of the expedition.
8. A new map of the island.

The present exploration, as we may still call it, is an aftercrop of Professor Furtwängler's wrestle with the Æginetan problem, in his new catalogue of the *Glyptothek Sculptures* (Munich, 1900). The Bavarian expedition began its digging in April, 1901, just 90 years after Haller and Cockerell. Fate favored both quests. On the first day of their digging, Furtwängler, Thiersch, and Fiechter cleared the ground plan of a propylon with octagonal Doric columns. They found on the same day two capital heads, two well-greaved tibias, one fine foot, and the lower part of a female statuette pertaining to the pediment sculptures of the ruined temple. Other surprises followed thick. On the 18th of June a large broken inscription of early date was recovered, upon which the goddess Aphaia is named as the divine owner, evidently, not of the V century temple, but of its VI century predecessor. The researches at Hagia Marina were continued, with a short midsummer interruption, until the spring of 1902. Doctor Thiersch, the Iolaos of the party, performed a prodigious amount of architectural and topographical surveying, digging, drawing, and photographing in his principal's absence. The new map of Ægina, of which a pirated edition has been issued at Athens, is his work.

GREEK CHAMPION, PERHAPS KING AJAX OF AEGINA
AEGINETAN MARBLES NO. 14

An act of private munificence has enabled the Bavarian Academy of Sciences to extend its reëxploration of Ægina from Hagia Marina all over the island. These further researches have occupied the Bavarian expedition since 1902. Professor Furtwängler's death at Athens, last October, resulted from undue exposure on Ægina. The reports on this part of his work are outstanding. The 504 quarto pages and the 550 illustrations of the present book are almost wholly concerned with the sanctuary of Aphaia at the northeast corner of Ægina.

But who is Aphaia? Cockerell entertained the erroneous view that the temple near this little harbor of Hagia Marina belonged to Jupiter Panhellenius. Other scholars declared the temple to be one of Athena. Furtwängler himself formerly regarded Herakles as the probable lord of the Dorian fane. All these conjectural attributions must yield now to the documentary Aphaia. The current mythologies

have little or nothing to tell of this forgotten goddess. Yet Pindar, in his day, wrote a hymn to her for the Æginetans. And Herodotos relates the dedication of certain Cretan spoils, captured by the Æginetans, in 519 B. C., to Aphaia, not as the Vulgate has it to Athena. Athena's temple in Ægina town was probably of later, Athenian foundation. Pausanias knew the temple of Aphaia only as a deserted ruin, as an Æginetan Goslar, or Melrose Abbey. Furtwängler places its erection after 480 B. C., and its destruction by earthquake within the V century. None of the objects discovered in the holy precinct are later than 450 B. C. Many earlier relics confirm the Cretan derivation of the Aphaia cult, and of the settlers whose descendants maintained it on Ægina.

Aphaia is the local epithet, or hypostasis of the Cretan Artemis Diklynna, or Britomartis. The Hellenic Britomart is, like Spenser's maiden knight, the pattern and emblem of chastity. Like many other Greek heroines she achieved deity by the ancient ordeal of a leap into the sea. Drawn from the salt water by Cretan fishermen, Britomart-Aphaia fled from their armorous advances in a frail skiff, and made a landfall on the coast of Ægina. "She was lost to sight in the pines there, at the very spot," says Antonius Liberalis, "where her temple stands now."

Sea-roving Hellenes, from northern Greece, afterwards fortified the summit of the island. Here they made their stand against the Cretan colony, and against the Venus-worshiping Phœnicians and Dorians, of Ægina town, facing the Peloponnesos. Later still, in 459 B. C., the Athenian conquerors of Ægina endowed their new urban cult of Athena with tracts of island soil. Furtwängler's exposition of these ancient race and cult rivalries is a vivid antiquarian parallel to Pater's literary sketch of similar conditions in *Hippolytus Veiled.* The ancient, mediæval, and modern history of Sicily is the story, *mutatis mutandis,* of almost any Greek island.

No explorers could surpass, and few would have equaled, the accuracy and the methodical conduct of the Bavarian scholars' work, both at Ægina and Munich. The appearance of *Ægina,* volumes I and II, only 5 years after the inception of the Bavarian researches, is a remarkable achievement. Furtwängler, Baur, and Sieveking gave two whole years to the re-restoration in plaster of the shattered and previously misrestored marbles. An adequate account of the other material, or of all the delicate plastic problems that have been worked up in Baur's 1, 5 models of the two pediment groups cannot be attempted here. Professorial purses, unrelieved by access to a public library owning the German publication, are referred to Furtwängler's own abridgement of his essay on the Ægina gables, which the Glyptothek catalogue counter has placed on sale at 1 mark 50 pfennigs: *Die Ægineten in der Glyptothek,* Munich, 1907. The vernacular student will find the case of the Æginetans less authoritatively summed up in my *Illustrated Catalogue of Antique Sculpture in the Art Insti-*

FALLEN TROJAN, PERHAPS PRINCE PRIAM OF TROY. FROM THE EAST GABLE OF THE TEMPLE OF APHAIA, AEGINA. AEGINETAN MARBLES NO. 23

THE FALLEN ACHILLES. AEGINETAN MARBLES NO. 15

NAKED GREEK, SNATCHING AT A FALLEN TROJAN'S SWORD. FROM THE EAST GABLE OF THE TEMPLE OF APHAIA, AEGINA. AEGINETAN MARBLES NO. 24

tute of Chicago, parts I and II, Chicago, 1906, 1907. For my own use I have had a young artist execute colored, paper-soldier copies of Baur's plastic figurines. They can be transposed on a nine-foot shelf, or on the carpet, to reproduce all of the proposed arrangements of the west gable. The present illustrations will serve to measure the advance of the new Munich restoration upon the old. The latter remains materially undisturbed, for the present, on the Glyptothek pedestal.

Thorwaldsen's distribution of the 10 west pediment statues he restored was based on Fauvel's interpretation of the subject as a battle of Greeks and Trojans for the body of Patroklos. Brunn made it a conflict for the arms and body of Achilles. The story of the latter fight looms large in the greater epic of the Trojan War. The northern Greek hero's Æginetan ancestry commanded a special interest on the island of Ægina. Ajax, king of Ægina, who bore the corpse of Achilles to the Greek camp, and Achilles were cousins-german.

The fallen hero, whoever he be, lies at the feet of Athena at center. To left of him we have a striding Greek champion, a kneeling Greek archer, a second Greek spearman, in a crouching position, and a wounded Greek lying at the angle-point of the pediment, toes out. Four correspondent figures, at the right end of the group, have been styled Trojans, although only one of them, the right-hand archer, wears an Asiatic costume, differentiating him from the Greek soldiers in the left half of the gable. This Phrygian, or Trojan bowman, has

ATHENA PRESIDING OVER THE BATTLE
AEGINETAN MARBLES NO. 16

always been called Paris; the Greek one is usually named Teucer, half-brother to Ajax. If Konrad Lange's version of the pediment, with three spearmen on a side, is adopted, we can name the Greek combatants Ajax, Ulysses, Teucer, and the Lokrian Ajax.

A revision of the west gable fragments establishes the presence of two additional spearmen in the composition. The west gable body-snatchers postulated by Lange have upon the contrary no material existence.

Thorwaldsen's Human figure at center, the dying Patroklos or Achilles, fares hardest in the harsh light of the *faits nouveaux*. It loses its head, first of all, to the second spearman on the Trojan side. The Bavarian expedition adds insult to this injury by dismissing Patroklos-Achilles from his center position and leading role altogether.

It robs him, indeed, of his very name. The ruthless pic kof the XX century excavators has unearthed the marble hand of a fourth fallen man. It clutches a stone at the west front of the temple and has a section of pediment-statue plinth attached to it. It is impossible to make anything of the statue this fragment belonged to, other than a pendant, a twin of the Patroklos-Achilles figure. This revelation obviously knocks the convergent-sides principle of all the former restorations over like a house of cards. Baur's new model of the west pediment accordingly faces the two striding champions next to the standing goddess at center 180° about. The charging leaders of Cockerell's and Lange's diagrams become symmetrical, combatant groups, with a fallen soldier lying between the feet of each pair. The extant marble plinth fragments and the vacant sockets in the common limestone plinth, which ran along the horizontal cornice of the pediment like a sidewalk, prove Baur's disposition of the 7 middle figures to be the only possible disposition.

The precise original records which Furtwängler has secured, besides, from neglected drawings and manuscript notes by Cockerell and Baron Haller are decisive for the position in which they found the fallen marbles of both pediments. This testimony is corroborated by the new fragments which have been discovered along the temple fronts.

Furtwängler's re-location of the 6 figures towards the angles of the west gable by this simple and certain criterion procures us another surprise. Cockerell's first diagram of this pediment placed the wounded men in the angles, toes in. So did the Æginetan sculptor. Thorwaldsen's end figures, which lie toes out, must exchange places. The two crouching spearmen and the two archers must exchange places likewise, to conform with the same evidence.

The new order divides and subdivides a composition of 13 figures into 4 lively groups of 3 and 2 statues each. These are agreeably interspersed in the recovered arrangment with the 3 single figures of the two bowmen and of the theoretically invisible goddess at center.

The corrected order and personnel of the east gable group, which was the front one, yields a similarly but differently enlivened array of 11 somewhat larger figures. Here, again, two symmetrical statues replace the single fallen man at Athena's feet. We have long admired the statue in question as one of the best subjects in either pediment. Baur's rstoration of it and of its newly discovered pendant figure, presents the two warriors not fallen, but falling backwards. They go down before the onslaught of the striding champions left and right of Athena, who turn their backs upon the goddess. The two supposed body-snatchers of this pediment have proved to be the naked squires of the two wounded hoplites, whose falling forms they rush forward to catch. The east pediment sculptor's kneeling archers face towards the middle portion of the battle group. His dying men lie toes out and unnoticed on the outskirts of the fray. He has suppressed the two crouching spearmen altogether.

TROJAN CHAMPION, PERHAPS AENEAS OF TROY
AEGINETAN MARBLES NO. 17

A deprecatory word on the Furtwängler-Baur coloring of the two gable groups is pertinent and necessary. Athena's blood-red gown, in the east pediment, the red and blue illumination of the other Athena's white tunic in the west pediment, the red and blue coloring of the other statues, and of the gable mouldings, and the blue tympana of both temple fronts are based upon extant vestiges of color on the original marbles and stonework. Selected early V century vases have been discreetly drawn upon for some of the obliterated decorations of the sculptured armour and textile fabrics. But the effect of this polychromy, as Furtwängler's colored folder plates render it, is inadmissibly ugly. Flat tints printed on top of gray half-tone pictures are

always a crude apology for plastic color. The primary colors which the Munich printer employs falsify even the flat tones of the encaustic limner. The application of a yellow size to the sculptures before the red and blue painting, would soften this discordant tricolor, but Furtwängler denies this to the architectural and sculptured members of the Æginetan temple. The accuracy of his observation on this point must be questioned, even at this distance. Andrews observed a mineral size on the architecture and sculptures of the Parthenon. The correctness of this observation has been confirmed by the trained eye and judgment of Doctor Murray.[3] Paccard and Carl Boetticher anticipated Andrews. I have myself discovered plentiful vestiges of the same ocher-toned sizing on other Akropolis sculptures, and on the temple and treasury carvings at Delphi. It occurs on the nude parts of the modeling no less certainly than it does on the draped. At Delphi I found vestiges of it on surfaces representing metal objects, on the coats of horses, and on the grounds and backgrounds of relief sculptures, and at Athens on the sculptures of the Nike balustrade. In the light of the known habit of Greek art from the Minoan to the Pompeian age, Furtwängler's contention that the Æginetan artists left the carnations of their male and female figures undifferentiated and colorless is preposterous. If nothing of that polychromy survives, it has gone the way of the same statues, vanished metal, or wooden swords and lances, of which none arises to question the original existence and artistic necessity.

ALFRED EMERSON.

Chicago.

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PALESTINE EXPLORATION FUND

CONTINUING the work of excavation at Gezer, and beginning on the second and last year of the permit, Mr. Macalister reports that the work of the last quarter has consisted in finishing the examination of the great tunnel. This, it was thought, might have been an ancient entrance to the city, but instead, as the work went on, it proved to end in a cave, in which rose a great spring of water. The tunnel was found to descend by a series of 80 steps, somewhat broken near the top, a part of the way being cut through a hard stratum of rock. The edge of the lowest step was only an inch or two above the level of the water, and about 130 ft. below the present surface of the ground, while the horizontal length of the tunnel is 219 ft. The spring was completely choked with soft mud, to an unknown depth, to clear which would have been a difficult task.

[3] See Murray, *Sculptures of the Parthenon,* pp. 51, 52.

The presence of the tunnel is of great interest from many points of view, and various questions arise regarding the purpose of its construction. These cannot at once be solved, although the subject is receiving the most careful consideration.

Mr. Macalister states that nothing was found to upset the previous chronological theory that the tunnel was first excavated not later than 2000 B. C., and abandoned between 1400 and 1200 B. C. Not a trace of any inscription was found which might indicate that the excavation had been made under the influence of one of the Egyptian or Babylonian Kings, accustomed as they were to inscribe their names on all their work.

At the bottom of the staircase two small, shapeless lumps of iron were found, and this fact is of peculiar interest as being a possible argument for a Babylonian influence. Mr. Macalister refers to Father Hugues Vincent, a careful French archæologist, who reminded him that the use of iron in Babylon goes back to the time of Gudea, one of the oldest Babylonian kings, about 3000 B. C. In any case, this is the oldest evidence of the use of iron yet found in Palestine, but that the fragments had to do with the *formation* of the cave is unlikely, as wherever the condition of the rock makes the preservation of the tool-marks possible, there is evidence of the use of *flint* chisels by the quarrymen.

It is hoped that this final year of the excavation at Gezer will enable Mr. Macalister to complete the work he has undertaken there, which has so fully proved the wisdom of a thorough exploration of one mound, and has given to the world the secrets of this ancient city.

MARY A. WRIGHT,
Honorary U. S. Secretary.
42 Quincy St., Cambridge, Mass.

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CLASSICAL ASSOCIATION OF MIDDLE STATES AND MARYLAND

THE second annual meeting of the Classical Association of the Middle States and Maryland was held in the George Washington University, Washington, D. C., on Friday and Saturday, April 24 and 25. Four sessions were held: One in the afternoon and one in the evening of Friday, and Saturday morning and afternoon. On Friday afternoon the address of welcome was given by President Needham, of the University, after which the following papers were read: *The Principles of Teaching Latin,* by Miss H. May Johnson, of the Eastern High School, Washington; *Greek Discoveries,* by Prof. M. W. Humphries, of the University of Virginia; *Slang, Ancient and Modern,* by Prof. Wm. N. Baker, of Haverford College. The

meeting then adjourned to attend the reception given to the association by the Washington Classical Club in the Woman's Building of the University.

In the evening Prof. Kirby Flower Smith, of the Johns Hopkins University, president of the association, gave the annual address. His subject was *The Legend of Sappho and Phaon.* After this paper a series of amendments to the constitution was passed. By one of these it was decided that each state and the District of Columbia should have a vice-president to represent it (except that New York and Pennsylvania should have two each), and that these vice-presidents and the editor-in-chief of the Classical Weekly should form the Executive Committee. It was decided that the dues should remain at $2, but that in the future the Classical Weekly can be secured within the territory only by membership in the association.

The session on Saturday morning was opened by Prof. John Greene, of Colgate University, who read a paper entitled *How Far Does Word Order in Latin Prose Indicate the Proper Emphasis?* The papers succeeding this were as follows: *The New Classical Philology,* by Prof. Mitchell Carroll, of the George Washington University; *The Rule of Three Actors in the Greek Drama,* by Professor Rees, of Adelphi College; *The Teaching of Virgil,* by Mr. J. B. Hanch, of Shady Side Academy, Pittsburg; *A Broader Approach to Greek,* by D. A. MacRae, of Princeton University.

At the afternoon session resolutions forwarded by the New England Association looking towards the securing of greater uniformity in entrance requirements were approved by the association, and further resolutions were passed empowering the Executive Committee to take all possible steps to induce the colleges in the territory of the association to agree upon a reform of the entrance examinations in Latin. The association then elected the following officers for the ensuing year: President, H. F. Dakin, Haverford School, Haverford, Pa.; Secretary-Treasurer, Charles Knapp, Barnard College, New York; Vice-presidents, District of Columbia, Mitchell Carroll; New York, George P. Bristol, of Cornell University, and J. W. Scudder, Albany Academy; Pennsylvania, W. B. McDaniel, University of Pennsylvania, and J. B. Hench, Shadyside Academy, Pittsburg; New Jersey, George D. Kellogg, of Princeton University; Maryland, H. L. Wilson, of Johns Hopkins University. The Executive Committee was empowered to add vice-presidents for states not represented above.

Then followed four papers, *Aids in Teaching Caesar,* by Miss Mary E. Harwood, of the Girls' Latin School, Baltimore, illustrating by the stereopticon various ways in which a teacher of Cæsar can make Roman life real and living to young students; *Aspects of the Speech in Virgil and the Later Roman Epic,* by Dr. Herbert C. Lipscomb, of The Country School for Boys, Baltimore, in which the use of speeches by the various Roman epic writers was discussed, and also

contrasted with that of the Greek epic; *Recent Archaeological Progress in Rome,* by Prof. Harry L. Wilson, of Johns Hopkins University, and *The Excavations in Crete,* by Dr. T. Leslie Shear, of Barnard College. The last two papers were illustrated by the stereopticon, and gave most interesting glimpses of the work that is being done in these vast fields.

A cordial vote of thanks was tendered to the George Washington University, the University Club, and the Washington Classical Club. The time and place of the next annual meeting were referred to the Executive Committee with power.

MITCHELL CARROLL.

Washington, D. C.

REPORT OF THE WISCONSIN STATE HISTORICAL SOCIETY

THE collections of the archæological and ethnological department of the museum of the State Historical Society of Wisconsin, at Madison, number at the present time in the neighhood of 15,000 specimens, some 5,000 of which are at present on exhibition in the principal ethnology hall. They are arranged in wall- and table-cases along the center and sides of this hall. Instructively labelled and accompanied with photographs, prints, drawings, and maps, their valuable contents are made additionally attractive to the University students and to large numbers of miscellaneous visitors, who come from all parts of Wisconsin and neighboring states.

The series of archæological materials at present on exhibition in the table-cases include the following:

1. Illustrating the manufacture of chipped flint implements. The products of both the "roughing-out" shops at the quarry sites, and of the finishing shops are shown, together with the primitive implements employed in their making. Caches of flint blades and disks add to the interest of the series.
2. Illustrating the classification and uses of chipped stone implements. This series includes arrow- and spear-points, knives, scrapers, perforators, spades, hoes, ceremonials, etc.
3. Illustrating the manufacture, classes, and uses of pecked and ground stone implements. It includes axes, celts, gouges, chisels, adzes, pestles, mortars, hammers, mauls, etc.
4. Miscellaneous stone, hematite, shell, bone, lead, iron, and other implements, ornaments, and ceremonials.
5. Collection of native copper implements and ornaments, including arrow- and spear-points, knives, axes, chisels, pikes, awls, needles, fishhooks, beads, crescents, etc.

6. Three additional cases illustrate mainly the implements, utensils, weapons, and ornaments of the aboriginal inhabitants of the Four Lakes region.
7. The collection of aboriginal earthen ware is especially valuable and extensive, including particularly a fine collection of ancient and modern Pueblo and cliff-dweller ware, the gift of Hon. Robert L. McCormick, and a fine series of mound pottery from the St. Francis Valley in Arkansas and Missouri.
8. The smoking customs of the Indian inhabitants of this section of the country are illustrated by means of an entire case of ancient and early historic pipes.

Models of a Wisconsin mound group, and of the principal types of effigy mounds for which this state is celebrated, complete the collections of archæological materials.

The American ethnological collections are at the present time chiefly confined to a single large wall case, and consist mainly of articles illustrative of the tribal life of the several well-known Wisconsin tribes—the Winnebago, Chippewa, Potawatomi, Menominie, Sauk, and Foxes. Several fine birchbark canoes swing from the ceiling above the row of center-table cases. There is also a good model of the hopi pueblo of Tegua.

On the tops of the wall cases are shown a rare and very valuable collection of oil portraits of noted Wisconsin and other Indian chiefs; of paintings of Black Hawk War battlefields, etc.

In this hall are also several screen exhibits, which are changed from time to time. Those at present on exhibition illustrate by means of carefully selected series of photographs, prints, maps, etc., "The Features of Wisconsin Archæology," "The Making of Fire," and "Central California Archæology." All are accompanied by full and carefully prepared descriptive matter. These screens represent a new departure in museum display methods, and particularly appeal to the student and visitor, who often has not the time nor inclination to study large series of materials. They likewise enable the presentation, in an inviting form, of subjects not otherwise readily illustrated in a limited space. Some other advantages are also apparent.

A fine collection of Mono materials from Mindanao is also temporarily installed in this hall. In an adjoining hall is a valuable collection illustrative of the interesting period of the Wisconsin fur trade. Other ethnological materials are shown in some of the other halls of the state historical museum.

Valuable additions to all of these collections are constantly being made, and the exhibits themselves are from time to time rearranged to meet the growing needs of students and visitors. Reading tables are now being provided, and these supplied with helpful literature. The historical collections of the institution are very extensive and valuable.

The museum occupies the entire top (fourth) floor of the beautiful and capacious new building of the Wisconsin Historical Society, and is one of the greatest educational institutions of its nature in the Northwest. It is visited by from 75,000 to 80,000 people annually.

REUBEN G. THWAITES,
Secretary and Superintendent.

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SKELETAL REMAINS IN NORTH AMERICA*

IN BULLETIN 33, of the Bureau of Ethnology Reports, Doctor Hrdlicka discusses the various skeletal remains found in North America and attributed to early or prehistoric man. Fourteen such discoveries are listed and described in more or less detail. These date from 1844 to the present time. Although the author looks at the subject from the standpoint of skeletal morphology, yet he considers the geological criteria, which he admits to be the more reliable for determining the antiquity. The difficulties encountered in considering the subject from the former point of view he states thus in his introduction:

> Somatologically, the bones, and particularly the skull, of early man may be confidently expected to show some differences from those of modern man, especially in the direction of lesser differentiation. Unfortunately the knowledge of the osseous structures of early man in other parts of the world is still meager, and this lack of information is felt very keenly. We do not know as yet whether the human beings of the geological period just before the recent differed so from the present man that even the extreme individual variations in the two periods (the most advanced evolutionally in the old and the least advanced among modern individuals), would stand appreciably apart. Very likely they overlap and dovetail considerably.

The chief interest centers in Trenton, Lansing, and the "Gilder Mound." Unfortunately one of the most important of the discoveries at Trenton, that of a femur found 7½ ft. below the surface by Mr. Ernest Volk, lying in "an apparently undisturbed deposit of gravel," is of practically no value from a somatological point of view, and hence receives bare mention. (See RECORDS OF THE PAST, Vol VI, 1907, pp. 162 and 168, for view of deposit and remarks by Prof. N. H. Winchell on this discovery.)

Concerning the Burlington County skull and that of Riverview Cemetery, at Trenton, Doctor Hrdlicka advances an interesting theory. He notes a strong resemblance in the general appearance and

**Skeletal Remains suggesting or attributed to early man in North America,* by Ales Hrdlicka. Smithsonian Institution, Bureau of American Ethnology, Bulletin 33, 1907.

cranial measurements of these skulls to a number of skulls from Holland, which date to the IX century. He thinks that a close "kinship" exists between these somewhat ancient Holland skulls and the New Jersey skulls. He concludes, however, that the Burlington County and Riverview Cemetery skulls are from modern immigrants from Holland, whose coming is recorded in the archives of New Jersey. He fails, however, to note any similar proportions in modern Holland skulls, which would seem necessary to verify such a theory.

We are indebted to Doctor Hrdlicka for a somewhat extended report on the fossil human remains from western Florida, which had not heretofore been fully described. His conclusion regarding their age is that they are quite recent.

In concluding his report, he says:

> It is seen that, irrespective of other considerations, in every instance where enough of the bones is preserved for comparison the somatological evidence bears witness against the geological antiquity of the remains, and for their close affinity to or identity with those of the modern Indian. Under these circumstances, but one conclusion is justified, which is that thus far on this continent no human bones of undisputed geological antiquity are known. This must not be regarded as equivalent to a declaration that there was no early man in this country; it means only that if early man did exist in North America, convincing proof of the fact from the standpoint of physical anthropology still remains to be produced.

The conclusion thus derived is liable to be misleading for evidence of "early man" is not restricted to crania. It would seem that the physical anthropologist would need more examples of what he will admit to be glacial crania before conclusions can be drawn regarding the characteristics which such crania should possess. As Doctor Hrdlicka admits, it rests largely with the geologists to determine the age of man on this continent. This being the case an anthropologist is at a disadvantage in selecting the best authorities among geologists. Judging from those referred to by Doctor Hrdlicka, he has been restricted to those whose views coincide with his deductions, while such geologists as Winchell, Upham, the late Professor Claypole, and many other reputable authorities are classed outside the sacred circle of "best qualified students of the question," who "maintain a careful reserve" [p. 35]. All authorities now admit the glacial age of the femur found by Volk in the gravel at Trenton, New Jersey, which was fully discussed at the meeting of the society of *Americanists* in October, 1902.

FREDERICK B. WRIGHT.

LEGAL AND COMMERCIAL TRANSACTIONS*

PART I of volume VIII of the reports of the University of Pennsylvania Expedition to Babylonia is written by that most careful and conscientious of scholars, Dr. Albert T. Clay, and deals with legal and commercial transactions chiefly from Nippur. Thirty-one texts are transliterated and translated. These are selected so as to give as wide a range of subjects as possible, and include, an action of ejectment to recover possession of a house, in other words an order to vacate; a commission for the guarding of a temple; an individual going surety for the appearance of 3 men to fulfil an obligation; sales of property; leases; a promissory note bearing 20 per cent. interest, and income tax, and many others.

Among the interesting side lights on Babylonian legal proceedings is the following oath formula:

"That they would not alter the tablet to the end of days, they swore by Ellil and NIN-LIL, the gods of their city; they swore by NINIB and Nusku, the guardian(s) of their peace; they swore by Cyrus, king of countries, king of kings, their lord."

The greater portion of the report is devoted to a concordance of proper names. There are also 72 plates of cuneiform texts and 11 plates of half-tone reproductions, which make the volume especially valuable. The whole reflects great credit on both the University of Pennsylvania and the author of this part, Doctor Clay.

EDITORIAL NOTES

INTERNATIONAL CONGRESS OF AMERICANISTS.—The Sixteenth International Congress of Americanists will be held at Vienna from September 9 to September 14 next. The main subjects to be discussed will be the aboriginal races and the monuments and archæology of America, and the history of its discovery and occupation.

PREHISTORIC CONGRESS OF FRANCE.—The 4th session of the Prehistoric Congress of France will be held at Chambéry, August 24 to 30. Some of the subjects to be considered are the Pile Dwellings and their ages, Palæolithic Period in Savoy, and its relation to Glacial extension; the Neolithic Period in the Alps, and Prehistoric inscribed rocks.

*The Babylonian Expedition of the University of Pennsylvania. *Series A: Cuneiform Texts*, Edited by H. V. Hilprecht, Vol. VIII, Part 1, *Legal and Commercial Transactions*, by Albert T. Clay. Dept. of Archæology of Univ. of Pa., 1908.

DISCOVERY OF ANCIENT GATE AT JERUSALEM.—During the year just past the discovery of a piece of wall at Jerusalem was reported. It is in line with the remains in the Russian hospice. The stones are similar to those in the Jews' Wailing Place. The gateway is a round arch. This piece of wall may prove to be part of one of the ancient walls of the city, or the wall of the Propylæa of Constantine's Basilica.

EXCAVATIONS AT LEUKAS DURING 1907.—Early this year Professor Dörpfeld issued a letter giving an account of his excavations at Leukas-Ithaca, in the summer of 1907. Work was begun in the plain of Nidri, where a primæval burial place was found, resembling those discovered at Tiryns and Orchomenos. Vases and a spearhead of a rare type were among the finds. The walls of a large building, probably, Professor Dörpfeld thinks, the palace of Ulysses were discovered. Water in the subsoil was a great source of difficulty.

NEED OF FUNDS FOR THE BRITISH SCHOOL OF ARCHÆOLOGY IN EGYPT.—An appeal for funds is being made on behalf of Prof. Flinders Petrie to carry out the work of excavating Memphis. This is the greatest archæological work of recent times. It is a costly undertaking in which Professor Petrie wishes to engage, and there are no public funds available. French and German archæological associations receive annual subsidies from their respective governments, but British workers are dependent upon private effort.

TOMB OF QUEEN THYI.—During 1907, Mr. E. R. Ayrton, working with Mr. Davis at Biban el-Moluk, or the Valley of Kings, discovered the tomb of Queen Thyi. The tomb contained a wooden shrine covered with gold-leaf and bearing an inscription which states that it was made by King Khuenaten for his mother. On a couch near by was a coffin in which was the mummy which had been reduced to a skeleton. The lid bore evidences of an erased cartouche. The lids of the canopic jars containing the viscera were carved into the likeness of the Queen. A gold crown in the form of a vulture with displayed wings was put on the skull of the skeleton, but was hind part before. The remains appear to be those of a young man about 25 years old. Maspero suggests that the body was that of Queen Thyi's son-in-law, Saanakhit, successor to "the heretic," and that his mummy had been substituted in the haste caused by its secret removal from Tel-el-Amarna to escape the wrath of the priests.

"GRAVE STONES" FROM AUSTRALIA.—In November, 1907, a series of "grave stones" from New South Wales was exhibited before the Anthropological Institute in London. They seem to be made of a mixture of gypsum and sand, and are marked with parallel grooves and signs resembling broad arrows. For certain banana-shaped objects with cup-shaped hollows in the bases found in sand-hills associated with implements and other remains of camps, no explanation was offered. Other shorter, thicker ones, sometimes helmet-

shaped, are certainly from graves, but why they were placed there is uncertain. It is suggested that they may be to warn people, for the natives believe that a man who walks over a grave will go lame. The quantity of these stones, placed in one or two circles, would seem to indicate some other purpose.

PRESERVATION OF ONE OF THE LANDMARKS ON THE SANTA FE TRAIL.—The Kansas Woman's Day Club has recently been instrumental in arranging for the preservation of Pawnee Rock, one of the remaining landmarks on the old Santa Fe trail. The present owner, Mr. B. P. Unruth, has agreed to deed to the state of Kansas the 5 acres surrounding the rock, provided a fund is raised to maintain it fittingly. The Woman's Day Club has undertaken this task. The plan is to have a forest acre, a driveway through the park, a monument with suitable inscriptions, and an ornamental metal fence around the whole. Pawnee Rock, in a town of the same name, in Barton County, Kansas, is situated on the edge of the Arkansas River Valley. Its commanding position made it a favorite camping place for parties following the Santa Fe trail, and a valuable lookout in time of Indian troubles.

"TOMBS OF GIANTS" IN SARDINIA.—During the fall of 1907 Dr. Duncan Mackenzie, of the British School at Rome, made a tour of Sardinia, giving special attention to the so-called "Tombs of Giants" found there. Each of these consists of a chamber 6 to 12, 15, or 18 yards long, and 3 to 3½ ft. wide and high. In front there is often a standing slab with a rectangular opening in it into the chamber, and from this slab started two wing walls enclosing a semi-circular area in front of the tomb. In the rear is a wall with an apse-like curve, parallel to the inner walls, and the frontal semi-circle, which probably supported the mound of earth over the tomb. This seems to be derived from the dolmen tombs. In some cases Doctor Mackenzie found one of these tombs close to a nuraghe [See RECORDS OF THE PAST, Vol. VI, p. 218]. This led him to the conclusion that these were family tombs in which corpses were placed transversely in a sitting posture. The ancient origin of the name "Tombs of Giants" is indicated by Aristotle's mention of "giants who sleep in Sardinia."

KITCHEN-MIDDEN AT NORTH BERWICK, SCOTLAND.—In his garden at North Berwick, Mr. James E. Cree has discovered a kitchen-midden with superimposed floor, apparently belonging to some mediæval structure. The floor, which was 4 ft. below the surface, yielded glazed pottery of mediæval types, broken and split bones of domestic animals, birds, fish, shells of edible mollusks, iron objects such as a knife blade, nails, a staple, a candle-socket with tang, spindle-wheel of lead, and a brass whistle with 6 sound holes ½ in. apart. Eight feet below the present surface, under this, was a layer of blackened sandy soil 1 ft. thick, mixed with charcoal, food refuse and fragments of pottery. The bones found were of the ox, pig, red deer, roe deer, fish; crab-claws and many mollusk shells were

also there. About 30 yds. north of this deposit was a similar layer at a depth of 5 ft. extending for at least 55 ft. The flint implements were Neolithic in character, but the pottery resembled more the sepulchral vessels of the early Bronze Age.

HARBOROUGH CAVE, DERBYSHIRE, ENGLAND.—Excavations carried on in Harborough Cave, near Brassington, Derbyshire, England, during the last year have revealed two floors of trodden black earth. The material between yielded implements of flint and bone. Near the entrance the excavators pierced to the red cave-earth, where there seemed to be animal remains of the Palæolithic period. A shaft near the inner wall showed a floor of trodden earth at a lower level than before, but probably of the same date, for there were two strata of intentional filling without relics between this and the higher floor. From the northeast angle a passage below the modern level led to an inner chamber. The finds included bone borers and needles, boars' tusks (some perforated), worked points of red-deer antlers, a bronze brooch from the early Iron Age, as well as iron fragments and a few Roman brooches of the II century, and pottery fragments of the Bronze and early Iron Ages.

TEMPLE OF JUPITER STATOR.—Signor Boni has been trying to determine the exact location of the temple of Jupiter Stator. Classic authors say that this was on the north slope of the Palatine Hill, and it has been supposed to have been between the Palatine and the Arch of Titus, but the remains at this point are now thought to be a reconstruction of the Augustan age, for their orientation is not that of Republican buildings. The temple was the fulfillment of a vow made by Romulus during a battle with the Sabines. He made a sacred enclosure with perhaps an altar. The temple was built in the time of Attilus Regulus, 294 B. C. Near the Arch of Titus two parallel walls of great masses of tufa were found. These bore the well-known marks found on the Republican city walls. Boni thinks them connected with inaugural rites. A well near by contained utensils of the II century B. C., a vase decoration with a woman's head, bronze *quadrans,* lead weights, lamps, and various articles of black Etrusco-Campanic pottery.

EXCAVATION OF RED HILLS, ON THE ESSEX COAST, ENGLAND.—During 1906 and 1907, certain "Red Hills" found in the marshes of the Essex coast have been the subject of investigation. They rise about 3 ft. above the level of the marshes and are close to the alluvium line which represents the limits to which the tide flowed before the marshes were enclosed. They are composed of burnt earth mixed with charcoal and objects of burnt clay. Among the finds are tapered bars, pedestals with enlarged bases, cylindrical pieces, objects with the appearance of having been once portions of flues, furnaces, or muffles, but always broken. The hills are surrounded by ditches and sometimes by low walls also.

In 1906, three typical mounds were explored. Besides those objects mentioned above, a few domestic vessels of late Celtic or early Iron Age were found. No bones or hearths appeared. During August, 1907, a mound covering 3½ acres was opened with similar results. The charcoal and wood found was oak, hazel, chestnut, and mountain ash. Some consider the objects found as connected with the manufacture of pottery, the pedestals being for the purpose of supporting the pottery while baking.

ROMAN VILLA NEAR BONA, NORTHERN AFRICA.—During 1907 there were made known in America for the first time certain of the results of excavations on the property of M. Chevillot, near the city of Bona, between Algeria and Tunis. The owner happened upon evidences of the presence of a Roman residence below his own in the course of digging a well. Further digging revealed 5 complete columns of the late Roman period and mosaics. Later the sill of the great palace was uncovered and part of a Punic mosaic, in black and white. Close by was a candelabrum, and further on a mosaic in ababaster, a marble column, capitals, other marbles, and potteries. A beautiful mosaic, 11½ by 18 ft., representing the "Triumph of Amphitrite," was also found. In one place at a depth of nearly 20 ft., six stones were found regularly laid, one on top of the other, for a distance of about 33 ft. Then followed thick walls of rubble and red mortar, without cement, indicating a remote period. A fallen vault, a group of immense blocks of granite, together with large stone slabs, and polished marble projections suggestive of tombs, were also discovered. Further investigation is needed before these ruins can be entirely explained and the relation of the parts established.

ORIGIN OF CERTAIN MUSICAL INSTRUMENTS.—In an article in the February issue of *Man,* Professor Ridgeway discusses the origin of the guitar and fiddle. Certain stringed instruments, such as the harp and lyre, have long been considered as derived from the shooting bow, but a further explanation is needed in the case of the guitar and fiddle. In the north of Europe the musical instruments were developed from the bow and no sounding board was used. But in the Mediterranean basin the tortoise shell was used as a sounding board down to a late period, and tradition carries its use in this manner back to an early period. In Africa at present stringed instruments with resonators formed of tortoise shell or of gourds, or fashioned from wood, in imitation of them, are still used by the natives. From a blending of the bow type and type of instrument made from the round gourd came the banjo, and from the melon-shaped one, the mandolin. In the primitive forms there were not a number of strings, but one long string passed up and down through notches at each end. The tortoise-shell instruments each had a waist formed by the conformation of the shell. In this waist Professor Ridgeway sees the origin of the waist in the guitar and violin.

SCHOOL OF ARCHÆOLOGY.—The *American Journal of Archaeology* announces that the Archæological Institute of America, through its committee on American Archæology, has established a School of American Archæology, as had been previously proposed. The object of the school is to conduct the researches of the institute in the American field and afford opportunities for field work and training to students of archæology. The school will direct the expeditions of local societies, and maintain archæological researches in the various culture areas of the American continent. The management of the school is in the hands of the Committee on American Archæology of the Institute, with the Director of American Archæology as the executive officer. Mr. Edgar L. Hewett now holds that position.

Four expeditions have been arranged for 1908: One to the Pueblo ruins in the Colorado tributaries of the McElmo canyon, in the southwestern part of the state, beginning on June 15; one to the Pueblo and Cliff House ruins in the Utah tributaries of the McElmo canyon, beginning June 1; one to the Pueblo and Cliff House ruins of Pajarito Plateau, in the northern part of New Mexico, beginning August 15; one to Central America for the study of the Maya culture, beginning about December 1.

FURTHER EXCAVATIONS AT LONG'S HILL, NEBRASKA.—Mr. Robert F. Gilder has continued his excavations at Long's Hill, Nebraska (See RECORDS OF THE PAST, Vol. VI, pp. 35, 40, and 76), with the result that additional skeletal parts have been found. In January, 1908, a trench was sunk 50 ft., north of the former excavations. For 2 ft. the earth consisted of a mixture of dark and light soil. Three feet from the surface parts of a skeleton were found. The bones lay north and south, with the head to the north. Close to the skull were a few shells. West of the skull and shells lay a black flint punch, 3½ by 2½ by 1 in. Near by was a large barbed arrowhead of flint, similar to the arrowheads from the Mississippi Valley, known as the Mound-builder type. Neither of these flints, says Mr. Gilder, is native to this section. The anterior part of the skull is missing. The two femora, part of two pelves, a dozen vertebræ, and numerous bits of ribs were saved. The position of the bones was similar to that of those found on the burned clay area of Long's Hill, except that the skull lay at the north. The earth beneath was unmoved loess. Later another trench was dug 44 ft. north of this last one. At about the same depth were found the remains of an Indian woman. The skull, which was entire, is low-browed. The skeletal parts found correspond, for the most part, to those found in the former trench. Fractured drift spalls, flint scrapers, and a shell ornament were found in connection with the human remains.

WORK OF PROFESSOR BURROWS IN BŒOTIA DURING 1907.—During September, 1907, Professor Burrows, of Cardiff, Wales, carried on excavations at Rhitsóna, in Bœotia. This site has been identified with the ancient city of Mycalessus. The work resulted

in a large find of Hellenic tombs with a remarkable series of vases and figurines. Especially beautiful is a Red Figure cup, apparently representing a parody on a fight between Heracles and an Amazon. Certain of the black ware found shows a new polychromy, men in crushed-strawberry red and brownish-yellow horses painted on a white slip. A figurine showing a cook grating something over a confection lying before him on a round plate is interesting for the brightness of the color, in contrast to the usual faded condition of the coloring on ancient figurines when found. The main importance of this work is in the idea which it affords of comparative date of the early Bœotian pottery. Most tomb-areas of Bœotia have been opened by illicit private diggers, and no scientific record kept. "Bœotian Geometric" has been supposed to be confined to the VIII, or VII century B. C., but here large quantities, coarser, to be sure, are found to have existed in the last half of the VI century. It occurs in 4 tombs with Black Figure vases and in two of these with Red Figure ware also. Each tomb was a single interment, as photographs taken at the time of first opening show. The date of the graves, the last half of the VI century, goes to support the topographical evidence on which Rhitsóna has been identified with Mycalessus, for the prosperity of the latter city came to an end in the VI century. The remains showing above ground, which have formerly been supposed to mark the site of the city, Professor Burrows believes to be of Byzantine origin. However, one and a half feet below the surface, near the tomb-area explored, he found a wall which is almost certainly Hellenic.

REPORTS OF THE CORNELL EXPEDITION TO ASIA MINOR.—Preliminary reports of the results of the Cornell expedition to Asia Minor have appeared. The principal sites have been fixed astronomically, while the territory between has been filled in with the compass and trocheameter. All the Hittite sites west of Kaisariyeh and Konia have been visited and inscriptions collected. At Boghaz-Keuy the large Hittite inscription, one of the largest known and generally considered quite illegible, was studied and the greater part of it recovered. At Kara Burun a new Hittite inscription was discovered. A squeeze of Monumentum Ancyranum was made. Many new classic and Arabic inscriptions were copied. At Angora and Boghaz-Keuy a number of cuneiform tablets and a Hittite seal were obtained. The pre-classic site of Iconium, the most important city of southeastern Asia Minor has been found. Much of the pottery found there is similar to the early types from Troy. Some specimens are of Mycenæan character. It seems probable, judging from the work done, that some of the general views in regard to the early peoples of Asia Minor must be modified or even abandoned. A marble idol of a type hitherto found only in the Greek islands in pre-Mycenæan settlements was secured at Angora. This gives an interesting link between Greece and Asia Minor. Important additions and corrections have been made to 9 Hittite inscriptions and 10 new ones have been discovered. At Isbeyuk, below Derende, the expedition found remains of a once splendid

monument. The sculptures depict a group of 3 men and a fourth standing on the back of a charging bull. They also secured the inscription on the black basalt stone at Bogcha on the Hayls. The stone had been long known, but there seems to be no record of the publication or copying of the inscription. Doctor Olmstead thinks the mound at Arslan Tepe, near Melitene, ought to be excavated. The top contains Byzantine ruins, while the Hittite stratum reaches 50 ft. from the ground and a lower stratum 44 ft. deep is pre-Hittite. After spending the summer and autumn in Asia Minor, the expedition passed into Assyria and Persia.

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MIGRATION OF THE EARLY BABYLONIAN CIVILIZATION

The following letter to The Editor will be of general interest to our readers:

Having read attentively your paper in the last RECORDS OF THE PAST, on "Influence of the Glacial Epoch on the Early History of Mankind," I wish to send you, along with my congratulations, my essential assent to all the points which you bring out. I am convinced, and confirmed by your review, of the correctness of my discussion of similar events in America, as published in RECORDS OF THE PAST of last May and June. I am glad that American research is leading off on some of these grand conclusions as to early man. Necessarily I was restricted to America. I did not suppose that so soon the same course of events would be so convincingly set forth for Europe and Asia. It seems now safe to assume that those old Eastern civilizations antedated the Glacial epoch and survived through it and were sustained by it. Your ingenious explanation of the fundamental cause for the abandonment of the Asiatic plains, and the movement to Europe, both as results of the retirement of the ice age, seems to me to furnish a strong point in your argument. It has always been to me an insurmountable difficulty to account for such a movement. No people would leave the vast artificial works of Babylonia voluntarily, to settle in a country more bleak and inhospitable. If their sources of irrigation were dried up, by the diminution of the mountain glaciers, there must have been no alternative but general migration. That movement must have been, therefore, post-glacial, and the incoming hordes must have driven out a less cultured people, viz., the Glacial man of the Somme gravels.

"We have got to account for this earlier type of man. Who was he, and whence did he come? He can hardly be said to have come from Asia by the Bering Sea passage (admitting such an actuality), for we find throughout the world, judging from the stone implements found, even in Egypt and in the Sahara desert (by Foureau), that similar types of culture were scattered, even then, as widely as now. There is the great problem. Shall we ever solve it?"

N. H. WINCHELL.

Minnesota Historical Society.

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VOLUME VII JULY-AUGUST, 1908 PART IV

Vol. VII

RECORDS OF THE PAST

Part IV

PROF. G. FREDERICK WRIGHT, D. D., LL. D., and MR. FREDERICK BENNETT WRIGHT, Editors

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RECORDS OF THE PAST

VOL. VII

PART IV

BI-MONTHLY

JULY-AUGUST, 1908

INDIAN SITES NEAR FREDERICK, WYO.

WHALEN CANYON, 15 miles in a direct line north of the old historic military post of Fort Laramie, now abandoned, on the Burlington Railway, in Laramie County, Wyoming, contains one of the largest pre-historic Indian village sites to be found in the West, and the country about it is strewn with records of the past. The canyon is really not a canyon, but more of a valley between sloping hills, which at places attain the dignity of miniature mountains. Its northern end is entered by a narrow defile just wide enough to admit a wagon, and the surrounding hills are so formed that once inside they shut off a view of the plains and the blasts of the north wind—a feature of many Indian village sites on the Great Central Plains. A small stream, like many Wyoming waterways, runs over its bed for a mile or two, and then disappears underground to reappear farther on down the valley on it way to the North Platte River. The stone tipi circles marking the site of the village begin close to the northern end of the canyon and continue 6 miles down the valley. Interspersed among the circles are stone cairns, which excavations have shown to contain nothing but flakes of charcoal and small animal bones. If they ever covered the remains of the aboriginal dead they have long since passed to dust.

About the circles of the village are chips of agate, quartzite, chert, moss agates, and every color of jasper. To the collector of stone implements the entire canyon is a veritable treasure house. Large and small

hide scrapers of a dozen patterns, arrow-heads, spear-points, blades of a variety of forms and ceremonial stones of all materials mentioned are to be had simply for the trouble of picking them from the the ground. I passed through the canyon on three expeditions afoot, our wagon having gone on ahead, and the load of implements I had to carry each time was a staggering one. Throughout the entire village there is nothing to show contact with civilization, and it, therefore, must be presumed that the village was occupied before its inhabitants came into contact with the white traders who pushed into the western wilderness in the early part of the last century. The ranch-house, store, and post-office of Frederick is located midway down the canyon. Surrounding the house is a fence with a gate in front. Between the gate and the side door of the house, a distance of 5 rods, I picked up along the path 16 finely shaped scrapers of jasper.

Wherever the ground is bare, either from the trampling of range cattle or action of water, the implements crop out in astonishingly large numbers. Besides the finished material one can find innumerable quarry blocks from the Spanish Diggings and other aboriginal quarries.

One mile north of Frederick a small canyon cuts into the Huronic marble of which the western hills are composed. The sides of this gorge are precipitous, and when once inside a view of the larger canyon is entirely shut off. Up in the right-hand wall above the talus slopes, the hill's cap is a sheer wall of 50 ft. in height. In the lower part of this cliff are a dozen large and small caverns, all of which show that at some time in the past they have been occupied by human beings. The walls and roofs are smoke stained, while the dust of ages lies upon the rock floor from a few inches to 2 ft. deep. The accompanying photograph of the caverns was taken from the opposite side of the gorge. There are two tiers of the caves. The weathered trunk of a cedar tree, to which the stumps of the branches are still attached, forming a crude ladder, leads to the upper caves. Only one of our party had the agility to reach the upper caves and he reported that their floors were strewn with flint chips and the usual dust accumulation through which animal bones were in evidence.

The cavern at the extreme right of the photograph had at one time been barricaded with cedar logs and large rocks, some of the latter being still in place. The logs show the marks of a stone axe and fire. In the dry climate of Wyoming, protected from the elements, they would last for centuries.

These caves were first discovered by Mr. J. L. Stein, a prospector and miner, whose ranch is a few miles down the canyon. Mr. Stein, who is an ardent archæologist, explored one of the caverns which ran back tunnel-like a score of feet. To the left, lying on a sort of shelf, covered with dust and stone slabs, he found the skeletal parts of a human being. The skull was heavily encrusted with a lime accretion. The skull was sent to Major J. W. Powell, late chief of the American

ENTRANCE TO CAVATE DWELLING, WHALEN CANYON
HARLAN I. SMITH AT LEFT, AUTHOR AT RIGHT
Photo by W. T. Wolfe

Bureau of Ethnology, Smithsonian Institution, who wrote Mr. Stein that while the skull showed the usual Indian characteristics, in his opinion the lime accretions upon it must have been from 300 to 500 years in forming, under the conditions described by Mr. Stein.

The caverns were visited in 1900 by Dr. George A. Dorsey, of the Field Museum, Chicago, and by an expedition of which I had charge in 1906, and again the past summer by the expedition of Mr. Harlan I. Smith, of the American Museum of Natural History, New York, whom I accompanied.

On the occasion of my visit in 1906 I found a small jasper blade and a bone awl lying on a shelf in the cave 10 ft. from the entrance.

Mr. Stein also secured a number of flint implements at the time he found the skeleton. A narrow passage leads back from the main cavern, but its entrance is so choked with fallen rock that exploration is impossible except by a boy. How far this cavern extends into the hills is impossible to determine; an electric torch I carried threw its rays only about 30 ft. along the passage, and its end was not visible.

Excavation in the dust of the cave was most difficult, as the floor covering filled the air and choked the workman whenever it was disturbed. A lynx had made his lair in the cave some time in the past as the bones of sage hens and jack rabbits were lying on the dust of the floor. On removal of the debris the rock floor was found to be strewn with flint chips and ashes, charred cedar sticks and charcoal.

To the left of the entrance, 6 ft. from the talus, a "handhole," worn quite smooth through long use, enabled us to pull ourselves into the cavern with little difficulty. From inside the entrance a very extensive view of the gorge below and the large canyon is had, making the place a splendid lookout, the watcher being entirely concealed.

Three miles south of Frederick on the northern border of the new mining town of Ironton is an ancient Indian iron mine, where the primitive miner obtained mineral paint with which to decorate himself many years before he secured better material from white traders. The mine had been drifted into the mountain 40 ft., following the vein of hemitite. To-day the entrance is choked by rock fallen from above. The Harlan I. Smith expedition of 1907 found stone implements about the mine's mouth and a large amount of refuse from the mine, and in the debris a grooved stone hammer.

Within sight of this ancient industry, across a small valley, is a tunnel and a large open cut owned and operated by the Colorado Iron and Fuel Company, both of which are equipped with modern machinery for getting out the iron ore, where several hundred men are constantly employed mining the same material sought by the primitive miner equipped with stone tools ages before.

The country about Whalen canyon is one of extreme wildness. The hills have been burrowed into by prospectors, and their log-cabins —mostly long since deserted—are occasionally met with. One can travel for days in the region to the west without meeting a human being. A little more than a half century ago, before the prospector made his appearance, Francis Parkman camped and hunted through these canyons and hills with his wild Indian companions. While the latter have disappeared the romance woven in "The Oregon Trail" still clings to what its author called the "Black Mountains," of which these hills and valleys are a part.

Robert F. Gilder.

Omaha, Nebr.

THE LATEST CONCERNING PREHISTORIC MAN IN CALIFORNIA

UNDER the title *Recent Investigations Bearing on the Question of the Occurrence of Neocene Man in the Auriferous Gravels of the Sierra Nevada,* Mr. Wm. J. Sinclair has given the result of an extensive re-survey of the evidence of prehistoric man on the Pacific Coast. The paper is No. 2, Vol. 7, of the publications of the University of California in American Archæology and Ethnology, and is deserving of most careful consideration.

The auriferous gravels of California are of various ages, running back in some instances, it is thought, to the middle of the Tertiary period, and are connected with several successive lava flows, which have covered them and prevented disturbance, until penetrated by miners in search of gold. The most important reports of the discovery of human remains in these gravels are those from beneath Table Mountain, near Sonora, and of the celebrated Caleveras skull, near Angels Camp, a few miles away. The most of these discoveries are reported by Prof. J. D. Whitney in his volume on *The Auriferous Gravels of the Sierra Nevada of California.* The facts were gathered while he was conducting the geological survey of the state. Unfortunately there is little chance to verify the reported discoveries, from the fact that the mining of these gravels has long since ceased to be carried on. The most of the discoveries were reported before 1865. Since then this branch of mining has ceased to be profitable, and the shafts and tunnels have been abandoned.

In going over the case with such data as can be collected at the present time, Mr. Sinclair says: "A review of the evidence favoring the presence of the remains of man in the auriferous gravels compels one to regard it as insufficient to establish the fact. * * * Either there have been abundant opportunities for the relics in question to be mixed with the gravels accidentally, or the geological conditions at the localities are such as to render it improbable that the implements and bones have been associated with the gravel to the extent supposed." (p. 130.) If this be true a colossal structure of modern science crumbles to dust, and the reputation of several eminent men of science suffers serious diminution. For, the evidence of the genuineness of these discoveries, and of the great age of the objects discovered, was accepted by such authorities as Prof. J. D. Whitney, Prof. Jeffreys Wyman, Dr. Clarence King, and Dr. Geo. F. Becker.

Doctor King reported that he took with his own hands a fragment of a pestle from the undisturbed andesitic sand and gravel close beneath the lava cliff of Table Mountain, near Sonora. Mr. Sinclair suggests that secondary cementation may have occurred in such a manner as to deceive so competent an observer as Doctor King.

The evidence of the genuineness of the various mortars, implements, and human bones reported by Doctor Snell, Hon. Paul Hubbs, and others, which was satisfactory to Professor Whitney in the course of his extensive survey of the region is declared unsatisfactory on the ground that the articles were not taken by these observers with their own hands from the gravel, but were found on the cars or buckets which were bringing the material from under the basalt capping to the surface. In all cases, however, Professor Whitney satisfied himself that they could not have been intrusive.

The mortar certified to by Mr. Llewellyn Pierce, as having been taken with his own hands from the deep gravels 200 ft. under Table Mountain is discredited on two grounds, first, that Mr. Pierce tells a different story to Mr. Sinclair from that told to Professor Whitney. He told Mr. Sinclair that it was as large as a 16-gallon milk bucket, whereas it is only 4¾ in. across and 3¾ deep. But this was 35 years after his affidavit was made for Professor Whitney, and when he was a very old man. It would not be surprising if the picture had faded a good deal during that interval. Mr. Sinclair says also that when he saw Mr. Pierce he showed him a small oval tablet of dark slate with a melon and leaf carved in bas-relief, which Mr. Pierce says he found in the same gravel, he thinks at the same time. But this tablet shows no signs of wear by gravel, and the carvings have been made by a steel knife blade. This would certainly dispose of the tablet. But the question still remains whether we should place as much confidence in the memory of a very old man after 35 years has elapsed as in his affidavit in the presence of such a judge of evidence as we suppose Professor Whitney to have been. Secondly, the mortar is of andesite, while the gravels under Table Mountain are believed to be pre-volcanic. Upon this point it should be said that the andesite from which the mortar was made may have been derived from some other locality on the Sierra, where a lava flow had preceded this one at Sonora.

In 1891 Mr. Geo. F. Becker, one of the most careful members of the United States Geological Survey, gave to the Geological Society of America an account of a mortar and pestle, which came into his hands a year before from Mr. J. H. Neale, superintendent of the Montezuma Tunnel Company, who said that he took it with his own hands from the Montezuman tunnel under Table Mountain, near Sonora, 1,400 ft. from the mouth of the tunnel and between 200 and 300 ft. from the edge of the solid lava. Near the same spot and on the same afternoon Mr. Neale says he found several spear-heads of some dark rock nearly 1 ft. in length. Mr. Neale declared "that it is utterly impossible that these relics can have reached the position in which they were

found excepting at the time the gravel was deposited, and before the lava cap formed. There was not the slightest trace of any disturbance of the mass or of any natural fissure into it by which access could have been obtained either there or in the neighborhood." (p. 118.)

Mr. Sinclair's interview with Mr. Neale 15 years after this deposition was made did not elicit any information very much different from this, except to identify the dark-colored spear-heads with obsidian. But upon this he remarks that the gravels lying in the center of the channel are believed to be pre-volcanic and so older that the outflows of andesite and obsidian, which are both late volcanic rock types.

With regard to this it may be repeated that the material of the mortar and the spear-heads may have been brought from some locality more or less distant. For example, we have in the Ohio mounds bushels of obsidian implements, which must have been brought from the Rocky Mountains in prehistoric times. As to the question of the possible disturbance of the gravel by former miners, Doctor Becker, in presenting his paper, justly remarked that a mining engineer was a better judge than a geologist could be, for it was such disturbances that they were constantly on the look-out for, and their opportunities to observe were better than any chance visitor could have.

Concerning the mortar which I obtained from Mr. C. McTarnahan, which he found in 1887, Mr. Sinclair learns from his brother, Mr. Frank McTarnahan, that the mortar was found "back of the lagging during the work of retimbering." The mine had been idle for two years, the mortar was not in the gravel when they found it, but thrust in back of the lagging as large pieces of rock and boulders are commonly used to fill up space between the timbers and the wall. But it would seem very improbable that a mortar would have been carried in 700 ft. from the mouth of the tunnel for such a purpose as that. If found with other large stones at the end of the tunnel it might naturally have been used or thrown aside in that way.

While Mr. Sinclair may seem to throw some doubt upon each of these cases taken singly, the combination does not so readily yield to his treatment. He divides to conquer. But the argument for prehistoric man on the Pacific is a cumulative one and is not dependent upon any single thread. It is only a few months since Mr. J. F. Kemp, of the Geological Survey, reported mortars from the auriferous gravels of Oregon (See RECORDS OF THE PAST, Vol. V, p. 190.)

Greatest interest, however, centers in Mr. Sinclair's conclusions concerning the celebrated Calaveras skull, which was said to have been taken in 1866 by Mr. Mattison from a shaft under Bald Hill, near Angels Camp, several miles from Sonora. This occurred beneath two or three lava flows and was 130 ft. below the present surface. The gravel belongs to the rhyolitic, *i. e.*, the earliest volcanic outflow. The skull came into the hands of Professor Whitney in June, 1866. It had been found the preceding February by Mr. Mattison, and taken to Mr. Scribner, who was then agent of the Wells, Fargo & Co.'s Express at

Angels. He shortly after took it to a medical friend, Dr. Wm. Jones, of Murphy's, who in turn gave it a few months later to Professor Whitney, who was conducting the State Geological Survey. Professor Whitney took it with him to Harvard College and in company with Dr. Jeffreys Wyman, then director of the Peabody Museum of American Antiquities, carefully cleaned it off and examined it, and both pronounced it a genuine fossil which bore every reasonable mark of having been found in conditions such as Mr. Mattison had described.

So the matter stood until 1897, after Professor Whitney's death, when the skull came into the hands of Professor Putnam, the present director of the Peabody Museum. Since then Professor Putnam has submitted the skull and the material scraped from it by Professors Whitney and Wyman to Mr. Sinclair, for examination, whose results are adverse to that heretofore expressed. The skull taken to Cambridge by Professor Whitney certainly did not come from gravel described by Mr. Mattison. The matrix in which the skull was encased shows no trace of having been rounded by running water. Fragments of charcoal and small portions of the shell of a land snail were adhering to the stalagmite covering. "The material is dissimilar in every respect to either of the gravels exposed on Bald Hill. In every respect it is comparable to a cave breccia." (p. 126.) It is evident, therefore, that the Caliveras skull, as it has been figured, must be given up.

But it is not so certain that there was no Caliveras skull found by Mr. Mattison in the rhyolitic gravel beneath Bald Hill.

The theory that Mr. Scribner and others had imposed upon Mr. Mattison by taking the skull from a cave and planting it in the mine is discredited by the character of the men, who were the most respectable business and professional men of the region, and who have been well known for 25 or 30 years subsequently. Professor Whitney resents such imputations with the greatest indignation. I called upon Mr. Scribner at Angels in 1891 and gathered some facts that have not been generally known, which probably shed light upon how a mistake in the skull may have originated. According to Mr. Scribner, Doctor Jones paid little attention to the skull when he brought it to him, since he could tell him so little concerning the locality where it was said to have been found, and so set it outside his door with several other specimens which had come into his hands, and thought no more about it for several months, until Mr. Mattison came to him for professional consultation. Then he inquired concerning the discovery and realized its importance. In this way it is quite possible that the wrong skull was inadvertently placed into Professor Whitney's hands.

Some such theory is evidently held by Professor Putnam, who writes to Mr. Sinclair: "When all the facts now known are carefully considered it seems probable that the skull which came into Professor Whitney's hands, through Doctor Jones, was from some cave or rock crevice in the vicinity of Bald Hill, and that without any attempt at deception on the part of Doctor Jones, and without any intention on the

part of any one to deceive the members of the Geological Survey, the skull was sent to the survey by Doctor Jones with the belief that it was the skull which he had been told Mattison had found in the shaft." (p. 129.)

Upon general principles Mr. Sinclair thinks it extremely improbable that human remains could have been found in the deep placer mines of the Sierra, since he is inclined to regard them as Miocene, or Pliocene when a fauna very different from that ordinarily associated with prehistoric man lived on the Pacific Slope. This fauna includes the great mastodon, the mammoth, a modern species of tapir, species of rhinoceros, hippopotamus, camel, and an extinct horse. But these are late pliocene or post-pliocene species. And Lesquereux says that the plants of the deep placers are decidedly pliocene. Mr. Sinclair quotes Lindgren as saying that "the deep gravels are probably of eocene or eo-miocene age." But he admits that the age cannot be definitely fixed until the flora has been more thoroughly studied. That man should have existed in this remote geological age is, according to Mr. Sinclair, "contrary to all precedent in the history of organisms, which teaches that mammalian species are short lived." (p. 130.)

In this reasoning, Mr. Sinclair overlooks the probability that pliocene animals of one part of the world may have lingered into the quaternary of another. In fact, there is not the sharp distinction between the pliocene and the post-pliocene that his reasoning implies. Doctor Becker, in presenting the evidence concerning Mr. Neale's discoveries, cogently remarked that very likely California was a health resort of pliocene species, as it is of the human species at the present time.

It is confessed on all hands that the changes on the upheaval of the Sierras were rapid, and geologically very recent. While according to Diller and Russell extensive lava flows have been coming out in Northern California and in Idaho within the last 200 years. We do not therefore feel that Mr. Sinclair's very able and interesting paper has wholly disposed of the question of prehistoric man on the Pacific Coast.

GEORGE FREDERICK WRIGHT.

Oberlin, Ohio.

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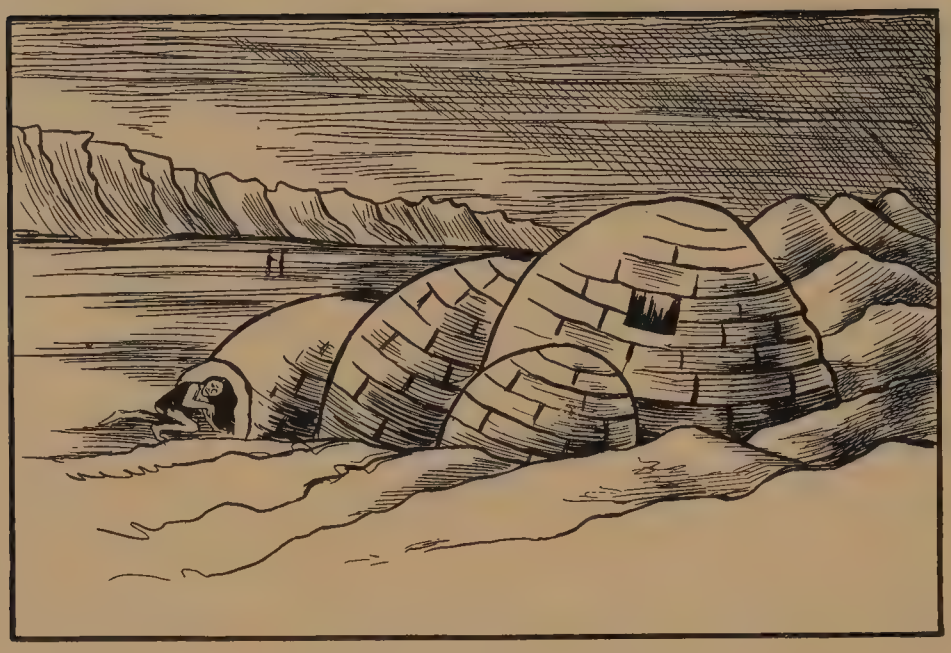

ICE HUTS OF THE ESKIMOS

A PROBABLE ORIGIN OF THE CUSTOM OF MOUND-BUILDING

MOUND-BUILDING was at one time quite a universal custom all over the face of the earth, and was not confined to any one particular class of people. It was practiced by some of the Indians of the Mississippi Valley to comparatively recent times.

After careful study I think it very probable that the building of mounds over the dead dates back to the snow and ice periods. It originated as a matter of necessity, and afterwards became a custom. We find to-day in the frozen North, near the Arctic Circle, huts constructed of snow and ice, in which Indians live, and frequently in them the smoked and mummified remains of their parents and ancestors are kept and preserved at the same time and place with those living. In other places they have them buried inside and beneath the earthen floor of the hut in which the younger generation still live. The motive for this practice I take to be similar to that expressed in the Sioux lullaby, "That the wolves won't get them." If a death occurred and they buried the body anywhere else in the snow, the sun later on might melt the snow away and expose the remains to the wild beasts of the snow and ice fields of the North. If the family last living in the hut moved away, or for some reason or another abandoned the same, they

first filled up the inside of the hut as much as possible with earth and gravel in order to better protect their venerated dead from exposure, and this together with the shape of the hut, in time became the mound. It is reasonable to suppose that, even after moving to warmer and more congenial climes, this custom once formed, was in a way continued, and finally became the burial custom of a great many tribes and peoples who have long been called the Mound-builders.

BUSHMAN VILLAGE, SOUTH AFRICA

EYE-WITNESSES TO THE BUILDING OF MOUNDS OF MORE RECENT DATES IN IOWA

An old lady, Mrs. Lawrence (formerly Mrs. Noble Dean), who lived with us, being at the time nearly 80 years of age, was the first white woman to settle on this side of the river, where the city of Dubuque now stands. She told me "That, after the battle near Prairie Du Chien, in 1832—known as the Black Hawk War—where the Sacs and Foxes were defeated and driven down the river, she saw one of the warriors who had been severely wounded in that battle, but managed to escape as far as Eagle Point, at Dubuque, where he died, buried, and a mound built around him. He was in full dress, war paint and feathers—sat upon the level ground, the body in a slightly reclining, but nearly upright sitting position—the earth and gravel had been carried from a distance to the place and filled around his body to the height of his shoulders, the head and shoulders and arms left exposed. She thought, on account of being pursued, they had to flee, and left it in such unfinished shape." However, this burial, according to the custom of the Muskwakies, of the Foxes, was complete,

MANDAN VILLAGE

the only other thing they would have done had they had time, would have been to set saplings over it in the shape of a hut and bank up the outside with sod. This is the manner in which Blackhawk was buried, and also more recently Ma-tau-e-qua, the Muskwakie chief at Tama, Iowa, in 1898. He was buried in a sitting posture, the feather in his hair coming just to the edge of the ground, facing west, his face and breast laid bare. Otherwise he was clad in moccasins, leggings, and blanket, adorned with beads and paint. Wa-pellu-ka, an old man, eulogized the dead, after which a gable roof was constructed and the outside banked up with dirt. A heavy pole was then erected at the west end of the grave, about 4 ft. out of the ground, and on it was painted a bear, representing the band to which Ma-tau-e-qua belonged; an eagle, a man, and under this the name Wa-pellu-ka, written in Indian, and a gun. Wa-pellu-ka belongs to the band of the Eagle. The exercises at the grave lasted about 2 hours, although stoicism has reached its highest point with these people, and their funerals are conducted without the slightest sign of emotion. The erection of the pole, reciting the band to which he belonged and the principal events in his life look to me remarkably similar to the totem poles found so plentifully in Alaska and along the Pacific Coast.

These round-shaped huts are by no means confined to the frozen North. For instance, the Bushmen, of South Africa, have circular huts, and our own Mandans on the banks of the Mississippi River, with their huts in the round and mound-like shape, bring us nearer home, and to the sodding up of the outside of the hut in which Blackhawk and Ma-tau-e-qua were buried. And even as far apart as the Bushman villages in South Africa, and the frozen North of Alaska, we find a great many customs and practices similar to those of the North American Indians.

RICHARD HERRMANN.

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FORT ANCIENT

FORT ANCIENT, in Warren County, Ohio, is the most extensive and complicated of all the prehistoric earthworks in North America, and its interpretation one of the most puzzling and at the same time fascinating of archæological problems. Its total length, following all the windings in its adjustment to the edge of the precipice around which it is built, is 18,712 ft., a little more than three and a half miles. The area enclosed is about one hundred acres. Its longest diameter is 4,993 ft., nearly one mile. The earth walls vary from 5 ft. to 24 ft. in height and from 20 ft. to 75 ft. in thickness at the base, the height being proportioned to the exposure of the position to be guarded. The total amount of earth contained in the protective wall is estimated to be 172,000,000 cubic feet.

Its location is significant. If one draws a circle running from the mouth of the Big Miami River through Dayton, Springfield, Columbus, and Newark to Marietta, at the mouth of the Muskingum River, it will include all the important mounds and earthworks of the Ohio Mound Builders, which are closely limited to the valleys of the Miami, the Scioto, and the Muskingum Rivers—the three natural gateways to central Ohio from the South. But farther up the river, at Mound City, near Wheeling, W. Va., there is the largest of all the conical mounds. Fort Ancient is near the southwestern limb of this segment of the circle which includes the Ohio mounds, and is in a natural position from which to guard the area from attacking parties approaching through the Miami Valley.

Fort Ancient, however, is not situated on the Big Miami, but on the Little Miami, which runs parallel to the main river, and from 10 to 15 miles distant eastward. But at Miamisburgh, 20 miles northwest, on the border of the bluff, bordering the Great Miami, there is a mound 65 ft. high (the largest in Ohio), from whose summit are visible other mounds in the direction of Fort Ancient, from which signals could easily be sent by fire or smoke not only to the Fort, but to all the southwestern part of the circle.

On coming to the Fort itself the situation appears to be one remarkably well adapted for defensive purposes. The valley of the Little Miami is here very narrow, and its bluffs very precipitous. The Fort is 269 ft. above the river (920 ft. above sea level), which is the general elevation of the surrounding country—the southern part of Ohio—being a plateau nearly 1,000 ft. above the sea, which has been dissected by the erosion of the Ohio River and its tributaries during

ARCHAEOLOGICAL MAP OF OHIO, SHOWING CHIEF MOUNDS AND ENCLOSURES OF PREHISTORIC PEOPLE*

long geological ages. The channel of the Ohio itself is 500 ft. below the general level, and its tributaries are all at corresponding depths.

At Fort Ancient two small tributaries, Randall Run and Cowan Creek, enter the river from the east about a mile apart, but they head nearly together, so that by their erosion they have formed a promontory with serrate edges admirably fitted for a fortification. With rare skill the builders have taken advantage of this natural position and completed a work that must have been well nigh impregnable against primitive modes of attack. All around the edge of this promontory the earth has been thrown up from the inside so as to conform to the slope of the precipice on the outside, and add to its height. Throughout the most of the distance a moat was thus formed, inside which at various places was dug to a depth of 7 ft. or 8 ft., furnishing reservoirs capable of retaining water for all the purposes of a considerable garrison with its attendant families gathered in from the surrounding country. At that portion of the enclosure where the promontory joined the main plateau and there were no gullies to reinforce the protective wall of earthworks (near D on the map), the earthworks themselves are much higher than the average, and the moat is on the outside.

*For the illustrations accompanying this article we are indebted to the Ohio State Archæological and Historical Society.

One of the most perplexing features connected with the fortification consists in the artificial openings which occur at irregular intervals in the wall. There are 74 of these, and it is difficult to imagine what purpose they would serve. Certainly they were not for purposes of drainage, for they have no relation to that necessity, being at all levels. As they now appear it would seem that they would be a source of weakness, offering favorable opportunities for an attacking party to force an entrance. But perhaps they were protected by wooden structures which afforded opportunity for the guard within the wall to sally out for attack, or from which they could enfilade the attacking party.

DIAGRAM OF FORT ANCIENT

Such works are known to have existed in some other enclosures occupied by the Mound Builders, but no positive indications of such wooden structures have yet been discovered here.

One objection to the theory that the works were a fortification is the difficulty of providing water for a large garrison during the dry season. But as already said, there are various deep places in the moat where, when cleared of the debris which fill them at the present time, water could be impounded and preserved for an indefinite length of time. These are occasionally 7 ft. deep, and have a bottom of impervious clay. Doctor Mills has recently found clear evidence that one of

EAST WALL OF FORT ANCIENT FROM THE FIELD OUTSIDE

these deep places, near the entrance to the south fort, was thus used as a reservoir. A long pavement of stones was found running parallel to the moat on the inside. In places this is several feet wide, and ends abruptly at the edge of the depression, where the stones were 3 or 4 deep, one upon the other. This would seem to imply that the stones were laid down to prevent sinking into the mud on going for water. Near the edge, as the stones sank into the soft mud, they were reinforced by others placed on top as occasion required.

As appears from the map (between X and K), the fortification was double, so that if driven out of the north enclosure, which was less easily protected, they had a more secure position of defense in the south fort. At the entrance to the south fort, the deep gullies which form so important a part of the defense, approach to within 5 or 6 rods of each other. Before reaching this from the north there is encountered a crescent-shaped mound completely crossing the narrow neck and capable of offering much resistance. While, on passing the narrowest portion of the neck two unusually large and high mounds, forming the "Great Gateway," obstruct the entrance. Singularly enough, also, there are two similar mounds at the extreme southern end, corresponding to these, and protecting a weak section in the promontory overlooking the river at that point. All around this southern fort the defensive works are very difficult of access, owing to the depth of the gullies, and the steepness of their sides.

About half way down the slope there is a marked terrace, 136 ft. above the river. But this evidently is a natural feature and has no connection with the work of man. A harder stratum of rock here checked the erosion of the streams in early geological ages, and left a rock shelf at that height on both sides of the river, and at both ends of the promontory.

Near the center of the south fort there existed an extensive cemetery in which 300 graves have been opened. The interments were made in coffin-shaped stone graves formed by placing stones beside

and over the bodies. Few implements and ornaments, however, were found with the skeletons, and no safe inferences can be drawn from the skeletons themselves as to the race to which they belonged. A few stone celts and spear-heads of yellow flint, and a little pottery were all the artifacts that were found. This is in striking contrast to what is found in the mounds excavated in the valley of the Scioto, near Chillicothe, where cartloads of large flint discs from Illinois or Indiana, and bushels of obsidian implements from the Rocky Mountains, and large numbers of ornaments hammered out of Lake Superior copper, together with mica from North Carolina, and shells from the Gulf of Mexico have been found together in more than one mound.

GREAT GATEWAY TO FORT ANCIENT FROM THE NORTH

A few low mounds occur near the northern end of the fort and just outside the northeastern entrance, where there is no natural protection. Here also extensive pavements have been uncovered, both within and without the fortification. These were about 1 ft. below the surface. More perplexing still are the parallel roads running out 2,760 ft. from the northeastern gateway along the neck of the main promontory. These were about 12 ft. wide and 1 ft. high. The earth of which they were composed was red and burnt, but no relics were ever found in or under them. Mr. Moorehead suggests that they resemble the stadia of ancient Greece, and may have served a similar purpose with them for the garrison of the Mound Builders in this fortification. While the use of the pavements may have been for gatherings of religious or social character.

The valley of the Little Miami is everywhere very narrow, as compared with that of the Great Miami. But a most beautiful view of it is obtained from what is called Prospect Point (upon the map), in the South Fort. The view is looking northward and comprehends the site of an Indian village of much interest at the bottom of the valley. Exca-

vations here revealed three distinct strata of village refuse, the lowest of which was 5½ ft. below the surface. The debris contained the bones of almost every bird, beast, and fish native to the region, together with fragments of rude pottery, much charcoal, and ashes, many burnt stones, and thousands of mussel shells perforated near the center. According to Moorehead, "Among other articles discovered were hammer and grinding stones, broken celts, spear and arrow heads, and knives of flint, bones, awls, and needles, some pointed at both ends, tibiæ of deer with the shaft worked to a sharp edge on each side * * * deer antlers, some of which showed marks of use as perforators or polishers, a few slate gorgets, and a few small perforated shell discs."

Near by, 37 graves were excavated, yielding 25 crania of a brachycephalic, or broad-headed type. Strangely, however, these were all of women or children.

LITTLE MIAMI VALLEY, LOOKING NORTH FROM GRANDVIEW POINT

That these graves were of pre-Columbian age is inferred from the fact that no relics of European origin have been found in the superincumbent soil, while the site was covered in 1812 by a forest of large sycamore, elm, and walnut trees.

AGE OF THE FORTIFICATION

According to Professor Moorehead, a walnut tree growing over the graves in the principal cemetery in the South Fort was cut down in 1870, and, by counting the rings of growth was found to be 255 years old. If each ring represents a year's growth (and that cannot be far from the truth), this tree must have sprouted in 1615. Nothing more definite than this has been found. But this, of course, would give only a minimum estimate of age. The graves may have been in existence centuries before this. But that the earth walls of the fortification had not been in existence many centuries before the discovery of

America by Columbus is evident from the small amount of erosion which has taken place at all the points where water courses found exit from the enclosure. At the present time we have much difficulty in protecting these points from action of the streams which pour through them after heavy showers or when the snows melt in the spring. Of course, since the ground has been all cleared and cultivated, the stream erosion has been greatly increased. But under the most favorable conditions the erosion at all times must have been appreciable, so that 1,000 years would have made more of an impression in widening and deepening the escaping water courses than has been made. A thousand years is probably the extreme limit of time that can be granted to the existence of the fortification, and it may be 4 or 5 centuries less.

WHO WERE THE MOUND BUILDERS?

What has already been said of the situation of Fort Ancient may shed some light upon this question. The limitation of these works to the southern central portion of the state, and to the vicinity of the Muskingum, the Scioto, and the Miami Rivers (the natural gateways from the South), give support to the theory that they were immigrants from the South who brought with them the higher civilization and the closer political organization of the tribes in that region. The predominance of the skulls of brachycephalic, or broad-headed skeletons, which is a characteristic of the southern Indians in contrast to the tribes of the Lake region, also favors this theory.

A suggestion of the late Lewis Morgan is worthy of more attention than it has received. It is, that the Mound Builders were a tribe of village Indians from the Southwest or from Mexico, that succeeded for awhile in transplanting their civilization into this northern region, supplementing their earthworks with wooden structures so as to make their enclosures as nearly like their original villages as possible. But, like the Roman Empire on a small scale, their higher civilization attracted "barbarians from the North," who waged war upon them and despoiled them of their possessions. This, however, did not take place without a struggle. Fort Ancient, and, perhaps, the earthworks at Newark, were strongly fortified outposts, which for a time checked the invaders, while a system of signal mounds enabled all the settlements of the Mound Builders to communicate with each other almost instantaneously.

Col. Charles Whittlesey, an authority of high repute, who early surveyed the region, asserts, as a result of his investigations that the conical mounds upon the hilltops were sufficient to connect the whole region in a well chosen signal system.

Probably, also, the conditions were not well adapted to the style of life natural to the invaders. They were still in the stone age. Their efforts to cultivate the land must have been greatly interfered with by the rank growth of forest vegetation, and have been much more difficult than in the irrigated region of Arizona and New Mexico. The

forests and streams of Ohio and the Mississippi Valley in general were better adapted to a race of hunters than to one which attempted to live by agriculture.

But, elaborate as are the works of the fortification at Fort Ancient, they do not seem to have been occupied for any great length of time, or to have served any purpose of defense worthy of their inception. Probably they are the work of a departing as well as of a departed race.

GEORGE FREDERICK WRIGHT.

Oberlin, O.

EAST WALL OF NORTH FORT

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THE PARAJIKAS

[In the May-June number of the *American Law Review* appeared an article by Edward P. Buffet, on the *Pārājikas*. As this article, with the translation of some of these laws which date to the V Century, B. C., contains a great deal of interest to our readers, few of whom would see the article in the *Law Review*, we publish the following lengthy abstract.—EDITOR.]

AT THE middle of the VI Century, B. C., the Aryan inhabitants of the Ganges Valley were still divided among free clans and kingdoms, the latter of which were slowly absorbing the former. These clans composed aristocratic republics with mote halls, elected head men and a regular police force. There is a tradition that at least one group of tribes possessed a series of judicial officers—justices, lawyers, rehearsers of the law maxims, the council of representatives of the 8 clans, the general, the vice-consul, and the consul himself—to whom successively, in criminal causes, appeals lay for the defendant, but not for the accuser. The consul's decision was based on a book of precedents, written or oral. The period when this procedure was in vogue, it is not attempted to fix. At the time aforementioned the Brāhman caste had not yet acquired its transcendence except in religious matters, with which the law was interwoven, and the Sākya clan of Kshatriyas were perhaps inferior to none in social prestige. A surname, common among them was Gautama or Gotama, which we find attached to two or three of India's most distinguished sages. One of these originated the Nyāya philosophy. The name is associated also with a legal treatise believed to date from before the Christian era. But especially has it been rendered illustrious by him who became the Buddha and led that great revolt against the spiritual despotism of the Brāhmans which proved the most important intellectual movement known to the history of Eastern Asia. He lived from 557 to 477 B. C. An understanding of his career and teachings is needed for a foundation to study of the Pārājikas, but our discussion

must not dwell upon many phases thereof, especially not upon the highest. The old faith had conditioned salvation on costly sacrifices performed by Brāhman priests, or, as an alternative, on self-torturing rigors. Gotama declared that deliverance was not by forms, ceremonies or agonies, but by unreserved purification of conduct and heart. As an aid to self-conquest he enjoined a temperate asceticism. Thus was instituted his Order of monks. Subscription was required to rules laid down by him or later added in his name, and the vows of chastity and poverty were fundamental, but there was no obligation of blind obedience to a superior nor of irrevocable membership. The 4 weightiest ordinances were prohibitions respectively of incontinence, theft, murder, and falsehood regarding the possession of supernatural qualities. Infractions thereof were called Pārājika (a word which means "involving defeat" in the struggle for saintship), and were visited with the highest canonical penalty—excommunication from the Order. Disobedience to minor precepts—of Saṃghādisesa, Pācittiyā and other degrees—was atoned for by confession and absolution, with the performance of some simple penance, or in the more serious cases by suspension. A collection of 227 such rules called the Pātimokkha, or "Disburdenment," was recited at meetings of the Chapter on one or two Sabbaths of the mouth, when such monks as had broken any of them were expected to acknowledge their faults. Voluntary confession and expiation have a large place in the Brāhman codes also. It is often provided there that amends may be made by running to the king with flying hair, bearing a weapon to receive from his hand the punishment, which he moreover, must not withhold.

Pārājikas II and III—larceny and homicide—comprise what is especially appropriate for our present study. In the text relating to them we shall frequently meet two minor degrees of guilt, Dukkaṭa and Thullaccaya, translated respectively "wrong" and "serious crime." These grades of offense were introduced at a later period than the Pārājika, Saṃghādisesa, Pācittiyā, etc., presumably by a generation that dared not extend the application of the time-honored terms to new facts. * * *

[The translations of the Pali Text Society, made by Dr. T. W. Rhys Davids and Prof. Hermann Oldenberg do not cover the Pārājikas] except the bare rules, as collected with others in the Pātimokkha. In the chief part omitted, called the Sutta Vibhanga, are the expositions and cases built upon the statutes. In Dr. Rhys Davids' American lectures, 1894-95 he said of them: "These are sometimes of very great historical value. The discussions, for instance (in rules as to murder and theft), of what constitutes murder and what constitutes theft, anticipate in a very remarkable degree the kind of fine-drawn distinctions found in modern law books. These passages, when made accessible, in translation, to Western scholars, must be of the greatest interest to students of the history of law, as they are quite the oldest documents of that particular kind in the world." But, so far as known, this is the first attempt at the attractive task he suggested. Why has the book remained in obscurity? Presumably because lawyers cannot read Pali and Pali students do not care for law. * * *

In the Pārājikas have been traced at least three stages of development. First came the statutes, or rules, found also in the Pātimokkha. They may have been framed by Buddha himself within his 45 years of public ministry. Afterward (2) was composed the Old Commentary, and finally (3) the cases or histories, whether placed at the beginning to tell how the statutes came to be enacted, or at the end to illustrate the principles expounded in the Old Commentary. Scholars submit that the collection of cases was, at Vesāli, considered too venerable to bear tampering with—say already a generation old—while the Old Commentary, and still more the statutes, must be shoved back well into the V Century B. C. * * *

The present paper is not a by-product of linguistic scholarship and does not purport to establish a standard translation for Orientalists. It results from an attempt upon the Pali language directly at this point in order to formulate an

account of the Pārājikas that may prove instructive to legal or historical students. With this disclaimer, I shall not feel bound constantly to break continuity by pointing out all the doubts and conjectures involved in my renderings. * * *

The first chapter of Pārājika II is occupied by the leading case on Larceny—Rex *vs.* Dhaniya, as we may designate it—reported to explain how the statute came to be enacted. Its *situs* is Rājagaha, capital of Magadha, a rising monarchy, nucleus of future empire, whose king, Bimbisara, was a patron of Gotama. Here, on the mountain of the Vulture's Peak, Bhagavat (*i. e.,* The Blessed One—Buddha) had been spending the rainy season, a number of his disciples being encamped on the slope of Mt. Isigili, where they had erected grass huts for the occasion. At the end of the 4 months they broke up the huts and departed to wander about the country, but the Venerable Dhaniya, the Potter's Son, abode there permanently. One day, while he was gone to the village for alms, some persons—who seem to have been the other monks themselves—came and broke up his grass hut, removing grass and wood. He built another and it was likewise dismantled; similarly a third. Seeing his three dwellings thus destroyed, Dhaniya bethought him of his hereditary potters' craft, and forthwith fashioned an earthen hut. That hut was handsome, beautiful and attractive, red as an indagopaka bug and musical as a small bell.

To build earthen dwellings was contrary to monastic discipline. As Buddha, with a company of faithful disciples, was descending the mountain, he espied the unseemly gorgeous edifice and directed his followers to destroy it. But even this misfortune did not discourage Dhaniya; he resorted to his friend, the keeper of the Brāhman temple (or palace), wood and begged for some of it as material for a wooden hut. The keeper was reluctant to let him have it, but finally was convinced by Dhaniya's assurance that the king had granted it, so Dhaniya had the wood cut up and removed by cartloads.

It befell that the Brāhman Vassakāra, prime minister of Māgadha, being apprised of the matter, made complaint to King Bimbisāra and had the keeper arrested. Dhaniya beheld the keeper led away bound, and in loyalty to his obliging friend, betook himself to the king. With due reverence to so holy a man, the king addressed him:

"Verily, 'tis told me, Sir, that the temple wood set apart from the village, deposited, not to be taken away, has been given to my lord."

"Even so, great king."

"Now we, Sir, kings to wit, are very busy and have many duties; after giving we should not recollect it; pray, Sir, refresh our memory."

"Remembrest thou, great king, pre-eminent among the anointed, such an utterance spoken as this: 'Given to Samanas and Brāhmans—grass, wood and water let them enjoy.'" (Samana refers to Buddhist ascetics, who are called Brāhmans in a spiritual sense—He is a Brāhman that is one inwardly.)

"I remember, Sir," replied the king. "There are, Sir, some Samanas and Brāhmans that are diffident, mistrustful, bent on self-discipline, and to them, in their mindfulness, come misgivings. It was said by me in respect to these, but thou hast no right to the forest. Thou, Sir, thinkest by this trick to get that which is not given. Now how indeed can I be willing to order that a Samana or a Brāhman, living in consecration, be beaten or bound or banished? Go, Sir; by the hair of thy body thou hast escaped; act not in this manner again."

The populace were indignant at the conduct of Dhaniya and murmured according to a customary formula, imputing hypocrisy to the monks. Their complaint was taken up by the monks that were consecrated, who laid the matter before Bhagavat.

After assembling the Chapter for trial of the case, Bhagavat interrogated Dhaniya, who readily confessed his guilt and forthwith was censured for his behavior, so unworthy of his profession and so pernicious in its influence both upon the unconverted and upon believers.

It chanced that a certain *quondam* magistrate, a great minister who had given up the world and joined the monks, was seated near Bhagavat. Bhagavat inquired of him:

"For how much (stolen), O monk, does Seniya Bimbisāra, king of Māgadha, when he has caught a thief, beat or bind or banish him?"

" 'Either for a pāda, Bhagavat, or for more than a pāda.' Now it happened that at Rājagaha a pāda was equal to five māsakas."

The value of a pāda in modern money has been variously estimated, but seems not to be very disproportionate to twelve pence, which at Common Law was the dividing line between petit and grand larceny. It might be inferred that Bimbisāra's law did not concern itself with trifles less than this, but we shall find that the later developments of Buddha's distinguished two degrees of thefts of smaller amounts.

The Bhagavat inflicted on Dhaniya further censure and delivered to the monks an ethical discourse, which he concluded by declaring the following precept to be recited thereafter as part of their ritual (the words in parentheses being added later):

WHATSOEVER MONK (IN VILLAGE OR IN FOREST) SHALL THIEVISHLY TAKE AN UNGIVEN THING, IN SUCH MANNER OF TAKING AS KINGS WOULD SEIZE THE THIEF FOR, AND BEAT OR BIND OR BANISH HIM, SAYING, "THOU ART A THIEF, THOU ART STUPID, THOU ART A FOOL, THOU ART DISHONEST"—THE MONK WHO IN THAT MANNER TAKES THE UNGIVEN THING, HE, TOO, IS PARAJIKA; HE IS OUT OF COMMUNION.

[Chapter III is the "Old Commentary," and gives a word-by-word interpretation of these statutes, a few of which we quote.]

Village is construed to cover "a one-hut village, a two-hut village, a three-hut village, a four-hut village, a village of mankind, a village of superhumans, a fenced village, an unfenced village * * * or a place where a caravan has encamped for longer than 4 months." The *outskirts of a village* are as far as a clod of earth can be thrown by an average man standing at the threshhold of the gate; or, if the village be unfenced, at the wall of a house. *Forest* comprises all beyond the village outskirts. (*Quaere:* Under the meaning of the statute are the "outskirts" within the jurisdiction?)

Thievishly (theyyasa*m*khāta*m*) is defined as "with thievish purpose, with the purpose of carrying away." * * *

"*Kings*—to-wit, universal monarchs, provincial governors, district rulers, village head-men, judges, royal ministers, or such, in short, as order mutilation and destruction." * * *

"*Would beat*—either with the hand or the foot or a whip or a stick or a half-staff or a cut (rod)." The verb translated "beat" is hanti, which means also "to kill," and is so rendered by Rhys Davids and Oldenberg in the Pātimokkha. While not disputing their authority, I have here preferred to follow the interpretation of the Old Commentator. A like ambiguity in the term for corporal (or capital) punishment is seen in the Sanskrit of Manu's code. Cannot we detect therein a vestige of the ancient Aryan usage of beating to death? To a survival of that practice we may attribute the custom, lately lingering in Russia, of imposing death sentences through the indirection of awarding about a thousand blows with the knout. An authority on Russian law tells me, indeed, that this practice is of Tartar, not Slavic derivation. But he adds that the Russian Slavic word for "beat" is "*bīt*" (pronounced like the English "beat") while that for "kill" is *ou-bit*," meaning to "beat to a finish." * * *

[In chapter IV, hypothetical cases explaining the statute are given. As an example we quote, in part, the case of property standing in the earth.]

"*Standing in the earth,* to wit, property deposited in the earth, buried, hidden. 'I will carry away property standing in the earth' (saith one), and with thievish intent, he either seeks out an accomplice or searches for a spade or basket, or he starts forth—guilty of a wrong (dukkaṭa). By way of beginning, he cuts a stick or a vine—guilty of a wrong. He digs or heaps or turns up the soil—guilty of a wrong. He touches a vessel—guilty of a wrong; stirs it—guilty of a serious crime (thullaccaya); removes it from its place—guilty of a Pārājika. Having introduced his bowl into it, he thievishly touches what is worth 5 māsakas (=1 pāda) or more than 5 māsakas—guilty of a wrong; he stirs it—guilty of a serious crime; he either makes it enter his bowl or removes a handful—guilty of a Pārājika." * * *

6. Property *standing in the water* comprises fishes, tortoises, lotuses, etc. A wrong is committed when, with thievish intent, one dives or emerges for them.

7. *A boat* is naïvely defined as that "by which one crosses"— * * *

"For taking flowers, green corn, shrubs, creepers, trees, and other unhusked (grain) the fine (shall be) 5 kṛishṇalas. For husked grain, vegetables, roots, and fruit, the fine (shall be) 100 (paṇas) if there is no connection (between the owner and the thief), and 50 (paṇas) if such a connection exists. An offense (of this description) which is committed in the presence (of the owner) and with violence, will be robbery; if (it is committed) in his absence it will be theft." * * *

The possible privity between thief and owner here must be noted. Commentators have variously explained it as "mutual friendly feeling," "residence in the same village," etc. * * *

[In another section the value of water is recognized and three degrees of larceny created according to the value of the water abstracted.]

22-26. Occasional whimsicalities are to be expected in the most serious of ancient literature. Several sections of the Pārājika relate to different kinds of creatures which seem to be treated as the possible perpetrators rather than as the subject-matters of larceny. They include mankind, footless creatures (snakes and fishes); bipeds (men and birds); quadrupeds and multipeds (scorpions, centipedes, caterpillars, and insects). Thievish trespass with each successive foot is a serious crime, and with the last foot a Pārājika. It is not many centuries since, in civilized Europe, all sorts of animals, from grasshoppers upward, were gravely sentenced to death or excommunication as culprits. Three swine were tried and executed for murder, the rest of the herd being condemned as accomplices, but pardoned on appeal to the Duke of Burgundy.

28. "*Guarding against removal,* to wit, while keeping coined property, one touches with thievish intent, to the value of 5 māsakas," etc. Obviously this is a case of embezzlement, in holding which to be larceny the Pārājikas are in advance of Common Law. Under the most ancient Roman jurisprudence, breaches of trust were not regarded as crimes.

[Chapter V contains hypothetical cases showing conditions which affect criminality.] These rules show more regard paid to the overt act than to the guilty design, and prove that under even so heartsearching a religion as Buddhism, the canonical discipline could not escape falling into technicalities. * * *

Sec. 1. "By five tokens is the taker of an ungiven thing guilty of a Pārājika: (1) There is adverse possession; and (2) there is a consciousness of adverse possession; and (3) it is an article of value, 5 māsakas or over 5 māsakas; and (4) a thievish intent is present; (5) he touches it—guilty of a wrong; he stirs it—guilty of a serious crime; he removes it from its place—guilty of a Pārājika."

[The necessity of appropriation in case of an emergency is recognized and] on this ground a monk (Chap. VII, Sec. 40) who took wood to prop up the wall of his hut was acquitted.

4. Conditions under which *animum furandi* is absent: "Not guilty is he who believes the property his own, nor he who takes in confidence, or temporarily (or in an emergency), or a possession of a ghost (or property of the dead), or of an animal; nor he who believes it to be discarded; nor a madman; nor one who takes with a purpose to throw away, or through the exigency of suffering; *etcetera.*"

Some of the terms thus translated are quite obscure. "With a purpose to throw away," I should render instead "with a belief that it has been thrown away." * * * The expression construed "through the exigency of suffering" (vedana*tt*assa) can hardly mean that thefts are excused because the thief is hungry. We have several examples where monks "ill-provided with food" were held guilty (Chap. VII, Sec. 13). A case (Chap. VII, Sec. 38), in which visiting monks who helped themselves to the Chapter's fruit for the purpose of eating it, were justified, may possibly be in point. I incline, however, to the view that this term refers to actual irresponsibility caused by suffering. A suggestion thereof is found in Pārājika III, Chap. V, Sec. 13.

"Ended is the First Recitation on Taking the Ungiven."

An index couched in verse is not common among Occidental books, least of all among law reports. Such a metrical table of contents summarizes the digest of cases comprising this chapter [VII]. Poetically it is very much like Hiawatha and may be imitated in English thus:

"From a washer, five reported; cases four of outer blankets; five of stealing in the darkness; five in sequence by a porter; five of rescue from destruction; two moreover from the breezes;

Corpse unbroken; drawing grasses; theft in bath-house—ten for total," etc.

The versification of this syllabus is not objectless. Where books were handed down orally such expedients were resorted to as nemonic aids. * * *

12. Fraudulently obtaining another monk's share of boiled rice was not Pārājika, but the falsehood constituted a Pācittiyā offense. Fraud seems to be viewed more unfavorably by the ancient Oriental jurists than by the early Western ones. In the beginnings of Rome it was not looked upon as criminal, while on Common Law as to breaches of trust, comment is needless. Nārada, of India, declared fraud to be a Sāhasa—a heinous crime of the grade of theft—and it was condemned by the law of the Hebrews (Leviticus XIX, 11). * * *

26. Three cases on smuggling.

"A certain person, who had brought along a jewel of great value, was following the way of the road with a certain monk. And then that person, seeing the place of custom, put the jewel, unknown to the monk, into the latter's bowl sling, and after passing it through the custom-house took it back again. To him (the monk) misgiving came—etc.—'What was thine intent, O monk?' 'I knew it not, Bhagavat.' 'Not guilty, O monk, since unwitting.'"

In the same situation, a person "acted as if he were sick and gave his property to the monk. Then this person, having passed through the customs office, spake to the monk thus: 'Return me the property, Sir, I am not sick.' 'But, friend, why did you act in that way?' Then the person explained the matter to the monk," who was acquitted of dishonesty, as above.

Whether because of poverty or of privilege, the monks must have been exempt from the payment of the octrois. The delivery to the monk in the second case may have been as a gift *causa mortis*, but more probably was a bailment for safe keeping. In a third case the monk was induced to pass the jewel through the custom-house knowingly, and was held guilty of Pārājika. * * *

33. A multiplicity of petty larcenies is not cumulative. The monk who ate a pot of ghee, little by little, committed only a wrong.

34. Conspiring accessories are as guilty as principals. * * *

By implication, the Buddhist law holds that stealing is stealing, even when from a thief.

38. Visiting monks who appropriated and ate fruit belonging to the resident Chapter were declared innocent, since they took for the purpose of eating. It is rash to infer that Buddha would have allowed equal liberty with the property of strangers, but we find tolerant rules of like tenor laid down in the codes of Manu (VIII, 339, 341), and Apastamba (I, Khanda, 28, 3). A similar custom among the Jews was availed of by Christ and His disciples when walking through a cornfield.

[Chapter I, of Pārājika III, begins with a history accounting for the enactment of the statute, which is summed up in the following precept:]

WHATSOEVER MONK SHALL KNOWINGLY DEPRIVE OF LIFE A HUMAN BEING OR SHALL SEEK OUT AN ASSASSIN AGAINST ONE, HE, TOO, IS PARAJIKA, HE IS NO LONGER IN COMMUNION.

[A later development is given in Chapter II, as follows:]

At one time a certain lay disciple was sick. He had a handsome, beautiful, and amiable wife, to whom the monks of the Sextet were thralled in heart. They desired, therefore, that he should not recover, and decided to utter to him the praises of death. So they flattered him for his good deeds and described the bliss that awaited him in Paradise. Their words led him to indulge (with suicidal motive, we must infer), in unwholesome food and drink, which brought on a severe malady of which he died. His widow reproached the guilty monks: "They uttered the praises of death to my husband and have killed him." When the case was heard and determined by Bhagavat, he directed that thereafter the Order should recite the statute thus:

WHATSOEVER MONK SHALL KNOWINGLY DEPRIVE OF LIFE A HUMAN BEING, OR SHALL SEEK OUT AN ASSASSIN AGAINST A HUMAN BEING, OR SHALL UTTER THE PRAISES OF DEATH, OR INCITE ANOTHER TO SELF-DESTRUCTION, SAYING: "HO MY FRIEND; WHAT GOOD DO YOU GET FROM THIS SINFUL, WRETCHED LIFE? DEATH TO THEE IS BETTER THAN LIFE"—IF WITH SUCH THOUGHT AND MIND, HE, BY VARIOUS ARGUMENT, UTTER THE PRAISES OF DEATH OR INCITE ANOTHER TO SELF-DESTRUCTION—HE, TOO, IS *PARAJIKA*—HE IS NO LONGER IN COMMUNION.

[Chapter III is a word-by-word commentary. The most important definition is that concerning the meaning of Pārājika.]

"*Is Pārājika.* Just as when a great rock is broken in two, so that it cannot be reunited, even so the monk who shall knowingly deprive of life a human being is no Sāmana, no son of Sākya, wherefore it is said, he is Pārājika."

In this, as in the corresponding anathema under Pārājika II, we are reminded of the old Gothic formula of outlawry.

[Among the hypothetical cases in Chapter IV, are:]

5. "*A pitfall*—to wit, one (A) digs a pitfall for a person, falling into which he will die—(A) guilty of a wrong. A person (B) falls into it—(A) guilty of a wrong; in the fall a painful sensation arises—(A) guilty of a serious crime; he (B) dies—(A) guilty of a Pārājika. * * *

9. Assaults with image, sound, smell, taste, and touch are appeals made to the five senses tending to cause death through fear or longing. One pair of cases is typical of all, substantially the same form of words being used in each.

"One produces an unpleasant sound, frightful, and fearful, hearing and being terrified at which, somebody will die—guilty of a wrong; hearing it, he is terrified—guilty of a serious crime; dies—guilty of a Pārājika."

"One produces a pleasant sound, amiable and heart-touching, hearing, and wasting away through not obtaining which, somebody will die—guilty of a wrong; hearing it, through not obtaining it he wastes away—guilty of a serious crime; dies—guilty of a Pārājika."

[Chapter V, of Pārājika III, like chapter VII, of Pārājika II, has a metrical index of the contents. The following cases are of special interest:]

14-16. Malpractice by monks on sick brethren by means of sweating, nasal treatment, massage, bathing, anointing, raising up, laying down and administering food and drink—three cases of each, as in Sec. 7. Presumably those monks were not licensed physicians, but since their treatment was almost purely external and dietary, their errors in judgment might excuse them, even under modern laws. Manu (IX, 284) declared that "All physicians who treat (their patients) wrongly (shall pay) a fine * * * the middlemost amercement," and another jurist adds that if death resulted the punishment was greater. Hammurabi decreed that if a doctor, by lancing, had caused the loss of a gentlemen's eye or life, his hands should be cut off.

17-21. Quite in contrast to the comparative apathy of Common Law, respect for life of the unborn prevails in Hindu sacred systems. (Apastamba I, Khanda 21, 8; Gautama, XXII, 13; Vāsish*tha*, XX, 23.) Some varieties of character and consequence which acts against it may assume are illustrated in the Pārājikas. Each case turns on the degree of guilt of a friendly monk who is the advisor or actor in the abortion. Death of the child renders him guilty of Pārājika, otherwise only of a serious crime, and this whether or not the mother dies. The distinction of the *beginning* of life, discussed in Chapter III, is not plainly brought out in these cases. There is one, however, of prescribing a drug to produce sterility, which resulted in the death of the woman, and yet was held merely a wrong. Death from a drug intended to produce fecundity also involved a wrong.

EDWARD P. BUFFET.

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ROMAN TOWN OF CORSTOPITUM, NORTHUMBERLAND, ENGLAND.—During 1906 and 1907 this Roman town on the banks of the Tyne, near Corbridge, has been excavated. The work points to the conclusion that the town was not a military camp, but a place of relaxation for the garrison of the Great Wall. Many Roman coins and some pottery were found. A small portion of the city was unearthed. It showed evidences of having been ravaged by fire at various times. One place of interest was a potter's shop, where were found pieces of Roman pottery. A number of Roman inscriptions and sculptures; as well as a war memorial, were also discovered. On a broken column a rude picture of a man, evidently a caricature, was scratched.

WORK OF THE OHIO STATE ARCHAEOLOGICAL AND HISTORICAL SOCIETY

AT THE annual meeting of the Ohio State Archæological and Historical Society the following officers were elected: Pres. Emeritus, Gen. R. Brinkerhoff; Pres., Prof. G. Frederick Wright; 1st Vice Pres., George F. Bareis; 2d Vice Pres., Daniel J. Ryan; Secretary and Editor, Dr. E. O. Randall; Treas., Edwin F. Wood; Curator and Librarian, Dr. W. C. Mills.

The legislature continues to make generous appropriations for the work of the Society, but the museum material is accumulating far beyond the capacity of the present temporary quarters. Plans were considered for the erection of a generous museum and library building, but the appropriation failed to be made. Interest in the matter, however, is such that there is little doubt that the requisite appropriations will be made by the next legislature. The appropriations for work this year were for current expenses $2,700, for regular publications $2,800, for the archæological department $2,500, for completing the purchase of Fort Ancient, $2,200, for republication of former volumes of the society for the use of members of the legislature $9,600.

Secretary Mills is at work with most satisfactory results in exploring the innumerable mounds and earthworks of the state, and is finding that the unsystematic methods of exploration heretofore pursued have revealed but a small portion of the rich material which they contained. The Ohio museum will soon be the best in the world in the relics of the Mound Builders, and the citizens of the state will no longer have to make pilgrimages to Chicago, Boston, Washington, and Salisbury, England, to study satisfactorily the archæology of their own vicinity.

FORT ANCIENT, OHIO

A new and accurate survey of Fort Ancient has just been completed under the auspices of the State Archæological and Historical Society by professors of the State University, aided by their students. From this survey the materials will soon be at hand for making an accurate raised map of this remarkable structure, which surrounds the edge of a promontory 270 feet above the Little Miami River, for a distance of nearly 4 miles. It is so evidently a military fortification that no other opinion can be held of it except by exaggerating the difficulty of obtaining a water supply. This difficulty has been partially

removed by the investigation carried on this summer by Doctor Mills, who has found that depressions several feet in depth were dug at various angles. There were, however, only exaggerated portions of the moat made by throwing up the dirt to form the earthworks. These depressions have been nearly filled up by subsequent accumulations of debris. But on clearing them out it is found that their bottom is of impervious clay, and that on the inside they are paved with flat stones which were evidently placed there to prevent those who went for water from sinking into the mud. At the edge of the reservoir there were two, three or four stones one on top of each other. This was evidently the result of piling one above the other as the first ones sank into the soft earth. It is not difficult to believe that water enough might have been conserved in these hollows to meet the requirements of a long siege.

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BOOK REVIEWS

OHIO MOUND BUILDERS[1]

OHIO, being one of the most important centers of the Mound Builder civilization, attracts such general attention that we are fortunate in having a short account of these interesting remains written by one on the ground, who has been in constant touch with the progress of the investigation of these mounds. This account, written by Mr. E. O. Randall, the secretary of the Ohio State Archæological and Historical Society, and entitled *Masterpieces of the Ohio Mound Builders,* is not intended as a profound "scientific or technical treatise" on the subject, but a brief description of the appearance of these mounds to-day and a resume of earlier accounts of their appearance when the country was first discovered.

Of the 12,000 prehistoric sites of Mound Builder occupation in Ohio, Mr. Randall only considers the most important such as Spruce Hill Fort, Highland Fort Hill, "Stone Fort" at Glenford, Miami Fort, Butler County Fort, and Fort Ancient. Naturally the last of these receives the lion's share of attention.

Concerning the so-called "enclosures," which include a great variety of structures, the author remarks that "These are built of stone or earth, and in some rare instances of both." "The hilltop defenses are not relatively numerous, but exhibit in their construction great engineering sagacity and skill and almost inconceivable labor. The enclosures on the plains or river bottoms are almost exclusively of eathern material, and are either walled towns or structures of refuge

[1] *The Masterpieces of the Ohio Mound Builders. The Hilltop Fortifications, including Fort Ancient.* By E. O. Randall. Illustrated, 126 pp. Ohio State Archæological and Historical Society.

and safety; possibly some of them were religious temples. They are of all dimensions and forms, many of them presenting combinations of circles, and squares and geometrical figures of every variety. They enclose from a fraction of an acre to hundreds of acres. They are literally "wonders," and more and more excite the curiosity of the lay spectator and the awe and admiration of the archæological student."

THE STORY OF THE REVISED NEW TESTAMENT[2]

FEW people realize the vast amount of work required for the revision of the New Testament, or the methods followed by the faithful members of the New Testament Company of American Revisers, who began their work in 1871, and continued it for nearly thirty years. Originally there were 19 members of the committee, but only 15 of these ever engaged in active work. Of the original members there is but one survivor, Dr. Matthew Brown Riddle, and to him we are indebted for the interesting *Story of the Revised New Testament,* a book of general historic interest and importance.

The author tells in the third chapter how the Greek texts were examined and the final translations made from that which seemed most authentic, no one text being followed exclusively. In the last chapter he mentions the distinctive features of the American Revised New Testament giving some of the reasons for the changes.

THE SWASTIKA[3]

In a short paper on the Swastika, by Mr. Edward Butts, he discusses the origin of the swastika, considering it to be developed from a calendar wheel. The paper is accompanied with a number of illustrations of swastikas and calendar wheels, which aid in following the author's ingenious theory.

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[2] *The Story of the Revised New Testament, American Standard Edition,* by Matthew Brown Riddle. 80 pp. Sunday School Times Co.

[3] *The Swastika,* by Edward Butts. 42 pp. Illustrated. Price, 25c. Franklin Hudson Pub. Co., Kansas City, Mo.

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EDITORIAL NOTES

BYZANTINE RESEARCH FUND.—A Byzantine Research and Publishing Fund has recently been organized in connection with the British School of Athens.

INTERNATIONAL CONGRESS OF PREHISTORIC ANTHROPOLOGY AND ARCHÆOLOGY.—The fourteenth International Congress of Prehistoric Anthropology and Archæology will be held in Dublin in 1909.

CLASSIC TEMPLE UNEARTHED AT BEYROUT.—While excavating on the north side of the mediæval Crusader church for a tramway in Beyrout, Syria, a large number of columns and debris of a classic temple have been brought to light.

BIBLICAL ASTRONOMY.—In a recent volume by E. Walter Maunder, of Greenwich Observatory, on the *Astronomy of the Bible,* the author denies the Hebrew dependence on Babylonia for her astronomy. He calls attention to the vast superiority of the Hebrew cosmogony over the Babylonian, and claims the complete independence of the Jewish Sabbath.

PROGRAM OF THE INTERNATIONAL ARCHÆOLOGICAL CONGRESS.—The work of the International Archæological Congress, which holds its next meeting in Cairo, in 1909, is to be divided into only 6 groups: Pre-classical Archæology, Classical Archæology, Papyrology, Christian Archæology, Numismatics and Geography, and Byzantine Archæology.

DELEGATES TO THE CONGRESS OF AMERICANISTS AT VIENNA.—The Department of State has appointed Prof. Franz Boas, of Columbia University; Prof. Marshall H. Saville, of Columbia University; Prof. George Grant MacCurdy, of Yale University; Prof. Charles Peabody, of Harvard University, and Prof. Paul Haupt, of Johns Hopkins University, to represent the United States at the Congress of Americanists to be held in Vienna in September.

MURAL DECORATIONS IN THE PYRENEAN CAVERNS.—M. Cartailhac and the Abbé H. Breuil have continued their observations on the paintings and mural decorations of the Pyrenean

caverns. A cavern with painted walls of palæolithic design has recently been inspected at Le Portel (Ariège), including representations of horses and bison. In this and other caverns marks of the footsteps of bears are to be observed.

FLINT IMPLEMENTS FROM REPHAIM.—In the rich alluvial soil of the plain of Rephaim, in Palestine, Mr. Herbert E. Clark has found a great number of flint implements which he has been collecting for 28 years. Most of these are "very early agricultural implements." Mr. Clark has been a very careful observer and has noted a singular fact "that in all his searches in this plain he has found no flint weapons, which he did not find on the site of the Philistine camp at Ramallah."

TEMPLE AT THE SHRINE OF ARTEMIS ORTHIA.—In the latter part of May the British School at Athens discovered in their excavations at Sparta the remains of a temple of the VIII or IX Centuries B. C. This shrine was built, in part, of wood and contains a primitive wooden image of the goddess Artemis Orthia. The remains lie partly under the VI Century temple discovered in 1906. The building is a specimen of a primitive Dorian sanctuary and is probably the oldest Greek temple as yet brought to light.

ELEPHANTS IN THE EUPHRATES VALLEY.—Ancient Assyrian records afford practically conclusive evidence as to the former existence of the elephant in the Euphrates Valley. During the Crimean War fossil or subfossil remains of an elephant were found in Armenia. These remains seemed to be intermediate between the present Indian species and the mammoth. Probably the Euphrates elephant was a western race of the Indian species which became extinct during the early historic period.

DOCTOR HEWETT IN THE CLIFF DWELLING REGION.—Dr. Edgar L. Hewett, who has been in Europe for several months visiting the various schools of American Archæology, has returned to this country, and will go to the Pajarito Cliff Dwellings, New Mexico, for several weeks of investigation. Doctor Hewett's thesis as Doctor of Sociology in the University of Geneva, on *Les Communauntés Anciennes Dans le Désert Américain,* has just been published in Geneva.

EOLITHS.—In a recent article on *Eoliths,* published in *Man,* Mr. Worthington Smith comes to the following conclusions:

"(1) The majority—9 out of 10 of "eoliths"—are natural stones not intentionally touched by man.

"(2) The minority are of human origin, but of well-known palæolithic or neolithic forms; these palæolithic minor forms being always found in company with palæolithic implements.

"(3) There is no evidence that any of the minor palæolithic forms, often termed 'eoliths,' are as old as the boulder clay."

WALL OF THEMISTOCLES.—The Wall of Themistocles at Athens has recently been the object of investigations. Thucydides said that the wall, built in haste after the retreat of Xerxes, was composed of any material which came to hand, even at the expense of public and private buildings in the neighborhood. So it happens that a number of archaic monuments have been found built into the wall. Among them is a tombstone on which stands in relief the figure of a warrior holding a spear. Underneath was a winged figure similar to the Gorgons of early vases. Another figure found was a sphinx with long formal curls and large flat eyes.

NEW FRAGMENTS OF THE PARTHENON SCULPTURES FOUND.—Two new fragments of the pediment sculptures of the Parthenon have recently been found. These are part of the head of Athena in the west pediment, and the head of the Lapith in metope 316, of the British Museum series. The Lapith Head is complete on the left, but is full of holes on the right. Of the Athena fragment, the London *Athenaeum* says it "is not represented in Carrey's drawing, which shows that the pose of this torso as set up in the Museum, is wrong, and this will be altered. The back of the helmet was evidently obscured by locks of hair, probably indicated in metal, for the attachment of which some holes are drilled in the marble beside each ear." The British Museum series of Parthenon marbles is being completed by the addition of casts of sections not already there. The Greek government has recently ordered casts made for that purpose. Some of these have been received, and others are still on the way.

INSCRIPTION REFERRING TO BEN-HADAD.—"Mr. Pognon, the French Consul in Mesopotamia, has notified the Academie des Inscriptions of an important discovery of 4 fragments of an extremely ancient Aramaic inscription of the VIII Century, B. C., referring to Ben-Hadad, son of Hazael, King of Syria, who is referred to in Jeremiah xlix: 27, Amos i: 4, and 2 Kings, xiii. The new text is a record of the victory of a certain Syrian king Zaker, who defeated Ben-Hadad and a number of allied chiefs. The battle appears to have taken place near Hazrak (*cp.* Hadrach, Zechariah, ix:1). No mention of a Jewish king occurs, but this defeat of Ben-Hadad by Zaker helps to explain the facility with which Jehoash took again out of the hand of Ben-Hadad the cities his father, Hazael, had captured from Jehoahaz, and thus recovered the cities of Israel. The deity to whom Ben-Hadad (Bar-Hadad in the new inscription) attributes his success is Baal-Shamem (Baal of the Heavens)." [*Palestine Exploration Fund.*]

MILEAGE RECORDER DEVICE IN ANCIENT ROME.—M. George Servant has recently found in a book called *La Nuova Architettura Famigliare di Alessandro Capra, Architetto e Cittadino Cremonese*, and published in 1678, drawings by Capra, illustrating the mileage recorder of Vitruvius, military engineer under Cæsar and Augustus, as Capra imagined it to have been. "Fix on the wheel of the car," says the Roman architect, "a disk bearing on its circumference a single cog-wheel working into another disk having 400 cogs. On the side of this second disk, a cog larger than the others will set in motion a horizontal disk, which also bears 400 cogs, and is furnished besides on its flat part with a certain number of holes in which there are little balls; these will fall one by one into a tube, when the rotation of the disk will lead them to its orifice; they will then reunite in a brass tub vase. One ball falling after each mile traversed; the number of miles done in a day will be known by counting the balls."—[*Scientific American.*]

INSCRIBED ROMAN STONE FOUND AT DORCHESTER, ENGLAND.—Rev. R. B. Bartelot, Vicar of Fordington St. George Church, Dorchester, England, reports the finding on February 5, 1908, of a block of stone 2 ft. 11 in. by 2 ft. 4½ in. and 6 in. thick. It lay face downward beneath St. George Church, where it formed part of the foundation of the southeast porch, probably having been put there in Norman times. The inscription, in 7 lines, seems to be as follows: "C(AIO) ARI(STO). CIVI. (R)OM. AN(NIS) L RVFINVS ET (CH)ARINA ET AVIIA FILI EIVS E(T) (R)OMANA VXO(R)." The following is the translation: "To Caius Aristus, Roman citizen, aged 50 years, Rufinus and Charina and Avea, his children, and Romana, his wife (or his Roman wife), (set up this stone)." Mr. Bartelot believes when the Norman builders of the church were at work, they found Roman stones in the neighborhood, and used this one as a foundation for the porch. The weight above it had broken it in two. A cast of the stone has been sent to the British Museum. The Bishop of Salisbury considers it to be of the II century. This is the first inscribed Roman stone found in Dorchester.

PORTION OF OLD ROMAN WALL FOUND IN LONDON.—The *London Telegraph* reports valuable Roman and Norman relics found on the site of Christ's Hospital, London. In connection with excavations for building purposes, a portion of the old Roman wall around the city was found to extend for 400 ft. at right angles to Newgate Street. A small part of this was kept intact as a specimen, and the rest destroyed. The rampart was 8 ft. wide at the base, 7 ft. at the top, and 16 ft. deep. It was roughly built, strengthened with lime and held together by several horizontal layers of tiles about 2 ft. 6 in. apart. A large number of earthenware relics were found near the wall. Most of them were broken and many were in a fragmentary condition. Coins were numerous. Curious bone skates,

broad and polished underneath, with holes for fastenings, leathern bottles and vases have also come to light. Roman relics, such as a pestle and mortar, were discovered within the confines of the old city. Outsides the city wall were Norman relics, coins, and tools.

INDIAN PORTAGE NEAR BATH, MAINE
Photo by B. C. Tuthill

AN OLD INDIAN PORTAGE.—While the cliff villages, works of the Mound Builders, and Indian village sites are receiving more and more attention, as they should, there is another class of historic records, *i. e.,* Indian portages and trails, which have been largely overlooked. Many of these, especially in the East, are fast being obliterated and will soon be entirely lost. Although, possibly, not of first importance, yet the history they record is worthy of preservation. The accompanying illustration is a view of the old Indian portage near Bath, Me., between Winnegance Creek and the Kennebec River, and Winnegance Bay, which is an arm of Casco Bay. The portage is about a half mile long and saved a very long detour. All such portages and other Indian trails should be recorded. In fact, an Indian trail and portage map of Maine would be exceedingly interesting and should attract the attention of some of the local societies which are in position to collect these facts.

ROMANO-BRITISH TOWN AT SILCHESTER.—Under the supervision of Mr. Mill Stephenson, the Romano-British town at Silchester, England, was further investigated during 1907. Former excavations had showed the foundations of a gateway to some important building, but the recent work showed only traces of it. Near by was a long brick drain. In what was probably the ancient garden were 3 wood-lined wells and a few rubbish pits. In one section a house, some of the walls of which were built on piles, was uncovered. Near by were a large wooden-lined tank and a mosaic floor.

At a little distance was a larger house of the courtyard type. In one part was a hypocaust and another chamber was perhaps a *lararium*. Outside was the mosaic floor of a destroyed wooden building. North of the courtyard house were the foundations of a square temple. The floor of red mosaic remained on the platform of the *podium* and the *cella* still showed the base of the broad step or platform for the image of the deity. Fragments of the image were scattered about. Portions of at least 3 inscriptions cut on thin slabs of Purbeck marble came to light. One of them contains the word MARTI, suggesting the dedication of the temple to Mars. Another, containing the word CALLEVÆ, identifies Silchester with Calleva, or Calleva Attrebatum.

DEATH OF SIR JOHN EVANS.—On May 31, 1908, Sir John Evans, K. C. B., F. R. S., died at the age of 84, at Britwell, Berkhampstead, England. He was born November 17, 1823, at Britwell Court, Bucks, and received his education at Market Bosworth School. He was elected Honorary Secretary of the Geological Society (of Great Britain), in 1854, a position which he held for 20 years. That he was a man of very broad interests is shown by the great variety and number of learned scientific societies with which he was connected. The following list we quote from the *American Anthropologist:* "He was treasurer of the Royal Society from 1878 to 1898, and president of many learned bodies, including the Geological Society, 1874 to 1876; Anthropological Institute, 1877 to 1879; Society of Antiquaries, 1885 to 1892; Institute of Chemical Industry, 1892 to 1893; British Association for the Advancement of Science, 1897 to 1898; Midland Institute, 1899, and Egypt Exploration Fund, 1899 to 1906. He was also a trustee of the British Museum, chairman of the Society of Arts, 1900 to 1901; high sheriff of Herts, 1881; vice-chairman or chairman of the Herts County Council, 1888 to 1905; chairman of Herts Quarter Sessions, St. Albans; chairman of the Lawes Agricultural Trust Committee; correspondent of the Institut de France, and honorary fellow of Brasenose College, Oxford."

Sir John Evans spent his recreation very largely in collecting and studying coins and antiquities which bore fruit in 1864 in his volume on *The Coins of the Ancient Britains.* Later, in 1890, this volume was brought up to date by a supplement. His work on *The Ancient Bronze Implements of Great Britain and Ireland* appeared in 1881. To archæ-

ologists, however, he is best known by his comprehensive work on *The Ancient Stone Implements, Weapons, and Ornaments of Great Britain,* the first edition of which appeared in 1872, a later edition having been issued in 1897.

MANUFACTURE OF THE MALAITA SHELL BEAD MONEY

"At various places off the coast of Malaita [Solomon Islands] a series of small inhabited islets have been built up upon the fringing reef. These singular reef-islet villages occur at Alite, Langalanga, and Auki, on the west coast; at Sio Harbor, at the extreme northwestern end of the island, and at Funafou, Urassi, Sulafou, Atta, Beresombua, Kwai, Nongasila, and Uru, on the east coast. The islets appear to have had their origin in raised patches of coral upon the reef flats, which have been laboriously added to and gradually built up by their inhabitants until a solid foundation, well raised above the water, was produced. They are undoubtedly of very ancient origin. The islets are faced with a wall of coral stones about 6 to 8 ft. high, with here and there an opening like an embrasure with a sloping beach for the admission of the canoes.

"They vary from as little under a quarter of an acre to two or three acres in extent, and are densely populated by a seafaring population, who speak a different dialect from the bush natives of the mainland."

The inhabitants live by fishing. They sell the fish to the natives on the mainland in exchange for vegetables and manufactured articles. They are very skillful in their boats and see to it that the inhabitants of the mainland have no boats, so that their island homes are safe from attack.

"It is at Auki, Langalanga, and Alite that the manufacture of shell money is carried on, and the quantity produced during a year must amount to many hundreds of fathoms.

"I have elsewhere spoken of the state of existence upon these small reef islets as probably presenting some resemblance to the conditions of the lake-dwellers of Europe, but perhaps a comparison with the first beginnings of Venice would be juster, and it is a curious and possibly significant fact that Venice is to this day celebrated for its manufacture of glass and coral beads, doubtless the survival of a primitive industry, the finished result of which, probably, somewhat resembled the shell bead money of the Solomons.

"The shell bead money of Malaita is of three colors—white, red, and black. It is generally known as *Rongo.* The white money is called *Rongo pura,* and the red money *Rongo sisi.* The black is not made up

into strings by itself, but a few beads of it are introduced here and there in the red and white money, either for contrast or to mark the length.

"The shell from which the white money is made is the *Arca granosa,* native name on Malaita, *Kakandu;* the red is made from the shell of *Chama pacifica,* native name *Romu;* the black is made from the shell of the black mussel or pinna, native name *Kurila."* * * *

"The shells are first broken into irregular fragments rather smaller than a three-penny piece. In this condition they are called *fulo-mbato.* For breaking the shells a stone hammer-head without a handle is used, called *fau-ui.* The stone anvil upon which the shells are broken is also called *fau-ui* or *fauli-ui.*

"The broken pieces are then chipped into the form of a roughly circular disc, in diameter about as large as a pea. They are then placed upon the flat surface of a piece of soft wood of semi-circular section. This instrument is called *ma-ai.* Upon its flat surface are a number of shallow counter-sunk holes in which the fragments of shell are placed. These are ground flat and smooth, first on one side and then on the other, upon a flat rectangular stone, called *fou-sava.* This grinding stone is of a particular kind, and the Auki people purchase it from the bush natives at the market place at Fiu, near Auki. It appears to be highly valued, as I was unable to obtain a specimen, but I have since obtained fragments.

"The broken pieces of shell, now ground flat on each side and reduced to the requisite thickness, are placed one at a time into the half of a coco-nut shell, called *teo-le-futa,* and a hole is drilled through the center by means of a pump drill, *futa.* This drill is tipped with a piece of flint or chalcedony, called *landi.* The stone of which these drills are made is also purchased from the Malaita bushmen." * * *

"The flint points are sharpened by means of the large fresh-water mussel or cockle shell, native name *kée.* The flint is held down upon a piece of wood with the left hand and small flakes are pressed off it by the edge of the shell held in the right hand, until the requisite degree of pointedness has been attained.

"After boring, the pieces of shell are threaded on a string made of a strong bush fibre called *lili,* in lengths of about 4 to 5 ft. From their previous grinding on both sides, the shells, or as they may now be termed, beads, lie closely together along the string, but their edges are still irregular.

"The next process is to remove the rough edges and to reduce the beads to the proper size. To effect this the strings of rough beads are fastened upon a flat piece of board called *mbambaliara,* and rubbed lengthwise with a grooved stone and sand and water until the requisite size and smoothness have been attained.

"The beads are now finished and ready for the final stringing. The finished beads are called *bata."* * * * [Abstracted from an article by C. M. Woodford, in *Man,* for June, 1908.]

RECORDS OF THE PAST

VOLUME VII SEPTEMBER-OCTOBER, 1908 PART V

Vol. VII

RECORDS OF THE PAST

Part V

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RECORDS OF THE PAST

VOL. VII PART V

BI-MONTHLY

SEPTEMBER-OCTOBER, 1908

A NEW SERPENT MOUND IN OHIO AND ITS SIGNIFICANCE

THE Serpent Mound in Adams County, Ohio, of which a full account was given in RECORDS OF THE PAST for April, 1906, has long been considered one of the most remarkable and significant prehistoric relics of America if not of the world. As was there detailed, its head was situated near the picturesque point of a rocky promontory 100 ft. above the valley of a small stream and the body stretched backwards in serpentine convolutions more than 1300 ft. ending in a coiled tail. The height of the mound was from 3 to 4 ft. and the width of the body 20 ft. diminishing to 4 or 5 ft. near the tail. The head represented an open mouth evidently intending to encompass something which seems to be an egg. Careful investigation of the mound revealed no burials or relics of any kind, showing that it was purely an ideal construction for some emblematic or religious purpose.

In his monumental volume on *Tree and Serpent Worship,* published in 1868, Prof. James Fergusson, one of the most eminent of the English authorities, refers to the serpent mound in Ohio, as having extreme significance if it indeed be a serpent, which he mildly doubts. The following are his remarks: "If we may trust the antiquaries of the United States there are great serpent mounds formed of earth, 1000 ft. long and more, which would seem to prove that before the present

race of Red Indians inhabited Ohio and Iowa, a race of Serpent Worshippers occupied their places, and they have been the ancestors of the Toltecs. When, however, we remember with what curious credulity Stukeley manufactured a Dracontium out of Avebury, and Bathurst Deane saw a serpent 7 miles long in groups of Menhirs at Carnac, we must pause before we feel sure that these American mounds do really represent serpents at all. This point cannot be settled without much more accurate surveys and more cautious observers than have yet turned their attention to the subject.

"If it should turn out that these are really representations of the great serpent, and that this worship is indigenous in the New World, we are thrown back on the doctrine that human nature is alike everywhere and that man in like circumstances and with like degree of civilization does always the same things and elaborates the same beliefs. It may be so, but I confess it appears to me that at present the evidence preponderates the other way. It should be mentioned, however, that in America the snake that is worshipped is always the indigenous rattlesnake. Whether as separate images or as adorning the walls of the temples of Yucatan, this characteristic seems invariable, and in so far would favour the local origin of the faith."[1]

A few years before (in 1862) Prof. Daniel Wilson, in his learned work on *Prehistoric Man,* remarked that the Serpent Mound of Adams County, Ohio; "is indeed altogether unique among the ancient earthworks of the New World, and without parallel in the Old though it has not unnaturally furnished the starting point for a host of speculations relative to the serpent-symbols of Egypt, Assyria and Greece."[2]

But doubts concerning the reality of this serpent symbol (if any remained at the time) were entirely removed by Professor Putnam's careful investigations in 1885, when he explored it from head to tail and restored it to its original condition and presented it to the Ohio State Archæological and Historical Society. The thousands of visitors who now make annual pilgrimages to the spot cannot fail to have all doubts removed and to go away with a profound impression of its significance and importance in the interpretation of human progress and thought. Professor Fergusson could not now write the paragraph which we have quoted.

Nor could Professor Wilson any longer refer to this mound as "altogether unique among the ancient earthworks of the New World and without a parallel in the Old," for a most remarkable discovery of another serpent mound, equal in dimensions, has recently been made in Ohio, which adds immensely to the significance of the previous discovery. In the mouth of two witnesses the facts are fully established.

This newly discovered serpent mound is in Warren County, Ohio, and hence may be called the Warren County Serpent Mound, as the

[1] J. Fergusson. *Tree and Serpent Worship.* p. 1.
[2] D. Wilson. *Prehistoric Man.* Vol. I, p. 404.

SNAKE DANCE AT ORAIBI, ARIZ., LINE OF ANTELOPE PRIESTS

SNAKE DANCE AT CIPAULOVI, ARIZ., SNAKE PRIESTS WITH REPTILES

Courtesy of Bureau of Am. Ethnology

other is called the Adams County Serpent Mound. The mound is situated in the valley of the Little Miami river opposite Stubbs Station, about half way between Morrow and South Lebanon adjoining the farm of the Baker family, who have been residents in the locality for over a hundred years. The valley of the Little Miami between Morrow and South Lebanon is pre-glacial and fully one mile in width, but like all similar valleys in southern Ohio, has been filled up to a great depth with gravel washed in by the floods of the melting ice at the close of the glacial period. The present stream has eroded a channel through this glacial gravel to a depth of about 50 ft., leaving a gravel terrace of about that height through a considerable distance. The deposits, however, are not all of equal height but generally stretch out at a somewhat lower level in beautiful fields adapted for cultivation.

The serpent is upon one of the highest portions of this elevated terrace with its head facing the river which is here flowing past it on the northeast. But, owing to the encroachments of the river on the gravel terrace, the head itself has been washed away and we have therefore only the neck and body of the serpent remaining for direct examination. Following this, however, from the edge of the bluff it can be distinctly traced in a mound about 3 ft. high and from 10 to 15 ft. wide in a southwest direction bearing gradually away from the edge of the bluff for a distance of about 500 ft. when a convolution is made toward the southeast for a distance of about 100 ft. which returns upon itself and then again bends in the same direction for about the same distance and returns nearly to the original line, from which it proceeds with minor curves less distinctly visible to an indefinite distance along the slope of the hill. Now that the bushes are cleared away and when the grass is cut (as it was during a recent visit which the writer made in the company of E. O. Randall, Secretary of the Ohio Society, and Dr. Hough, of Lebanon), the outlines are perfectly distinct and no one seeing them can fail to recognize an artificial product like that in Adams County representing a serpent in active motion.

Perhaps, however, it is not exactly correct to speak of this as a recent discovery for it has been known and visited by local authorities for a long time and was carefully examined several years ago by Dr. M. C. Metz, who has so long been coöperating with Professor Putnam in the exploration of prehistoric burial places at Madisonville in the lower part of the Little Miami valley. It is said also that Dr. Scoville of Lebanon, wrote a brief account of it for a Cincinnati daily paper, but we have been unable to find a copy of this communication. Twenty years ago, also, Professor F. W. Putnam visited it, but owing to the growth of brush and vegetation was unable to determine positively that it was not part of an enclosure. A few years later, however, Dr. Metz made a careful survey of it, but has never published the results. Through his kindness we are permitted to give the essential facts and from his notes to draw the accompanying illustration. We quote the following notes made by Dr. Metz at that time:

"Beginning on the south bank of Big Run Creek, at a point about 35 ft. above its bed, is the embankment forming what still remains of the head, the greater part of the head, however, has been destroyed by the encroachment of the stream. From the head the embankment extends about direct south 65 ft., thence south 52 degrees W. 300 ft., thence curving in S. W. to S. E. E. 75 feet, thence S. 88 degrees E. 186 ft., thence curving in a southwestern direction the curve

SKETCH OF WARREN CO. SERPENT MOUND
BASED ON DR. METZ'S MEASUREMENTS

being 85 ft. in length; thence S. 82 degrees W. 208 ft.; thence curving S. 82 degrees E. 123 ft.; thence S. 82 degrees E. 226 ft.; thence curving to west 150 ft., at which point the ground slopes rapidly to the creek bottom lands and the embankment could not be further traced on account of the ground being overgrown with dense weeds and grass. These measurements were made with a tape line and pocket compass along the crest of the embankment, which was traced out the length of 1369 ft. In the fall of the year 1892, I visited this earthwork in company with Mr. Harlan I. Smith, now of the American Museum

of Natural History, New York, and a cross section of the embankment was made. This revealed a layer of large lime and flat river stones, 20 ft. wide, placed on the level surface, and the earth embankment was built over it. The embankment was about 4 ft. in height at this point. The greater part of this earthwork was in the woodland, well preserved large trees growing on the top and slopes of the embankment."

At the present time about half of the serpent is in a wooded pasture lot sparsely covered with large trees, but the convolutions spread out into a meadow on the other side of the fence which has been cultivated from time to time; not withstanding the partial defacement by cultivation this portion of the serpent is still very clear and pronounced. The total length of the serpent, according to Dr. Metz's measurement was fully 1300 ft. corresponding very closely to that of the Adams County Serpent.

The significance of this remarkable effigy is enhanced by considering both the general and the special location chosen for it. The Adams County Serpent is in the near vicinity of the remarkable cluster of mounds and earthworks in the Scioto valley around Chillicothe; while this is near the equally remarkable cluster of mounds and earthworks in the Miami valley. Fort Ancient is on the Little Miami river a few miles above the Warren County Serpent while the celebrated Turner group of mounds is but a few miles below, and other mounds and earthworks occur at frequent intervals on the surrounding hill tops. Both these serpents, therefore, were located with reference to most important centers of prehistoric populations.

Locally, also, the sites are equally significant. The Adams County Serpent, is situated where it could be looked down upon from surrounding heights by a vast concourse of people. This is still more evident in the case of the Warren County Serpent. The hills on both sides of the valley of the Little Miami between Morrow and South Lebanon, rise about 300 ft. above the present level of the gravel terraces. If the timber were all cleared away the elevated terrace upon which the serpent is situated would be visible for miles around, indeed no more conspicuous situation could be imagined. It is almost like that of the center of the Colliseum at Rome. Moreover, it is more than probable, indeed almost certain, that during the occupancy of this region by the mound builders, the timber was cleared off from this section of the valley, for the cultivation of corn was generally practised by the mound builders especially in the river valleys so favorably situated as this is, where the soil was fruitful and easily worked and near to abundant water. The numerous remains of earthworks in the vicinity and of implements found over the surface of the valley are indubitable witnesses of a considerable population which could have been supported only by the resources of agriculture.

The significance of the existence of this second serpent mound of such enormous size can hardly be over estimated. Beyond all question

HERCULES KILLING THE SERPENT

these effigies are symbolical. They are the embodiment of ideas which moved this prehistoric population to gigantic combined effort at expression. They serve closely to ally the mound builders of the Mississippi valley with the almost universal body of nations and peoples who have feared and propitiated or adored and worshipped the form of the serpent through all time. They at once start anew the question whether this reverence for the serpent has spontaneously and independently arisen among nations from a common impression made upon the senses by its appearance and behavior or whether serpent worship is derivitive, thus indicating a common origin of the human race.

Curiously enough the serpent has been about equally feared and adored, the symbol of the serpent has stood to represent both evil and good. The brazen serpent of Moses in the wilderness was a symbol of healing. The figure of the serpent was put to a similar use by followers of Æsculapius the god of medicine whose statue of gold and ivory was surmounted by a head surrounded with rays which grasped a knotted stick with one hand while the other was entwined with a serpent. The national emblem of China found on all their flags and appearing in innumerable combinations is a dragon of fearful mien

THE NAGA IN THE FRIEZE OF THE OUTER ENCLOSURE
AT AMRAVATI, INDIA

supposed to be terrible to their enemies but friendly to them. The Chinese dragon was supposed to dwell in spring above the clouds to give rain and in the autumn under the water.

In Grecian myths one of the great tasks of Hercules was to vanquish the Lernean Hydra while it was represented that when in his cradle he strangled two serpents which Hera had sent to destroy him. The serpent also was an emblem of Ceres and Mercury as well as Æsculapius. Apollo also is made to slay the Python. The serpent was introduced as an object of worship in Rome several centuries before the Christian era. In Egypt it is represented in carvings of the Predynastic age, and later Kneph was symbolized by a serpent on two legs or with a lion's head. Typhon of Egypt was a serpent of 100 heads. One of the trials of the goddess Parvati was that she was compelled to wrestle with the serpent. In the Chaldean myths Bel was represented by a dragon, and in the Indian myths Krishnu's greatest triumph was over a serpent. In Zoroastrian religion the serpent is the synonym for the spirit of evil. Among the Mohican Indians the rattlesnake was reverenced and called their grandfather. Thus among all nations the serpent seems to have filled the role both of a beneficent and a malevolent deity. The strongest phrase of condemnation which Christ could use of the Pharisees was to call them serpents and a brood of vipers.

Concerning a group of figures found in Mexico among which serpents are represented, Baron Humboldt says: "The group represents the celebrated serpent-woman Chinacohuatl, called also Quilaztli, or Tonacacihua, 'Woman of our flesh;' she is the companion of Tonacatenetli. The Mexicans considered her as the mother of the human race, and after the god of the celestial paradise, Ometenetli, she held first rank among the divinities of Anahual. We see her always represented with a great serpent. Other paintings exhibit to us a feather-headed snake cut in pieces by the great spirit Tezcatlipoca, or by the sun personified, the god Tonatiuh. These allegories remind us of the ancient traditions of Asia. In the woman and serpent of the Aztecs we think we perceive the Eve of the Shemitic nations, in the snake cut

in pieces the famous serpent Raliya, or Kalinaga, conquered by Vishnu when he took the form of Krishna. The Tonatiuh of the Mexicans appears also to be identical with the Krishna of the Hindus, recorded in the *Bhagavata-Purana,* and with the Mithras of the Persians. The most ancient traditions of nations go back to a state of things when the earth, covered by bogs, was inhabited by snakes and other animals of gigantic bulk. The beneficent luminary, by drying up the soil delivered the earth from these aquatic monsters. Behind the serpent, who appears to be speaking to the goddess Chinacohuatl, are two naked figures; they are of different color, and seem to be in the attitude of con-

FRAGMENTS SHOWING THE NAGA IN A FRIEZE AT AMRAVATI, INDIA

tending with each other. We might be led to suppose that the two vases which we see at the bottom of the picture, one of which is overturned, is the cause of this contention. The serpent-woman was considered at Mexico as the mother of two twin children. These naked figures are, perhaps, the children of Chinacohuatl. They remind us of the Cain and Abel of Hebrew tradition."

Among the American Indians the serpent was used to insure good fortune in some of the games with dice sticks, and occasionally the serpent would be painted or tattooed on the naked form of an athletic warrior. It is proper to recall also the proverb wise as a serpent and

FLINT KNIFE OF THE PREDYNASTIC AGE FROM EGYPT

After de Morgan

AN INDIAN INHABITING THE COUNTRY NORTHWEST OF LOUISIANA IN 1741, SHOWING THE USE OF THE SERPENT SYMBOL

HEAD OF MEDUSA

harmless as a dove, and the fact that in the temptation in Eden it is represented that the attractive proposition of the serpent was that he would make our parents wise.

But on the other hand the serpent is very generally identified with the evil forces of the world and is in many places in the Bible identified with the devil who is called that old serpent. In Africa and in ancient Mexico the worship of the serpent was associated with almost unlimited sacrifice of human life.

In explanation of this singular combination of supposed attributes Mr. Fergusson has well remarked that, "When it comes to be more closely examined, the worship of the Serpent is not so strange as it might at first sight appear. As was well remarked by an ancient author[3] 'The serpent alone of all animals without legs or arms, or any of the usual appliances for locomotion, still moves with singular celerity,' and he might have added—grace, for no one who has watched a serpent slowly progressing over the ground, with his head erect, and his body following apparently without exertion, can fail to be struck with the peculiar beauty of the motion. There is no jerk, no reflex motion, as in all other animals, even fishes, but a continuous progression in the most beautiful curves. Their general form, too, is full of elegance, and their colours varied and sometimes very beautiful, and their eyes bright and piercing. Then, too, a serpent can exist for an indefinite time without food or apparent hunger. He periodically casts his skin, and, as the ancients fabled, by that process renewed his youth. Add to this his longevity, which, though not so great as was often supposed,

[3]Sanchoniathon quoting Taatus ap Eusebium, Præp. Evangel. 40

is still sufficient to make the superstitious forget how long an individual may have been reverenced in order that they may ascribe to him immortality.

"Although, therefore, fear might seem to suffice to account for the prevalence of the worship, on looking closely at it we are struck either in the Wilderness of Sinai, the Groves of Epidaurus, or in the Sarmatian huts, the Serpent is always the Agathodæmon, the bringer of health and good fortune. He is the teacher of wisdom, the oracle of future events. His worship may have origniated in fear, but long before we become practically acquainted with it, it had passed to the opposite extreme among its votaries. Any evil that ever was spoken of the serpent, came from those who were outside the pale, and were trying to depreciate what they considered as an accursed superstition."[4]

The majestic imagery of Milton represents Satan as talking thus with his nearest mate:

> "With head uplift above the wave, and eyes
> That sparkling blaz'd; his other parts besides
> Prone on the flood, extended long and large,
> Lay floating many a rood; in bulk as huge
> As whom the fables name of monstrous size,
> Titanian, or Earth-born that warr'd on Jove,
> Briareos or Typhon, whom the den
> By ancient Tarsus held."

This is paralleled by the following passage from Ovid:

> "Of new monsters earth created more
> Unwillingly, but yet she brought to light
> Thee, Python, too, the wondering world to fright
> And the new nations with so dire a sight:
> So monstrous was his bulk, so large a space
> Did his vast body and long train embrace.
> Him Phœbus basking on a bank espied,
> And all his skill against the monster tried;
> Though every shaft took place, he spent the store
> Of his full quiver, and 'twas long before
> The expiring serpent wallowed in his gore."

What therefore shall we conclude is the cause of this universal veneration of the serpent? By many it is supposed that the human mind is so uniform in its constitution that like causes will always produce like effects, and that the characteristics of the serpent naturally would produce upon all men similar effects and impell them to similar acts of reverence and worship. Upon this theory serpent worship is a spontaneous growth of the various nations who actually practise it.

[4]Fergusson. *Tree and Serpent Worship*, p. 2.

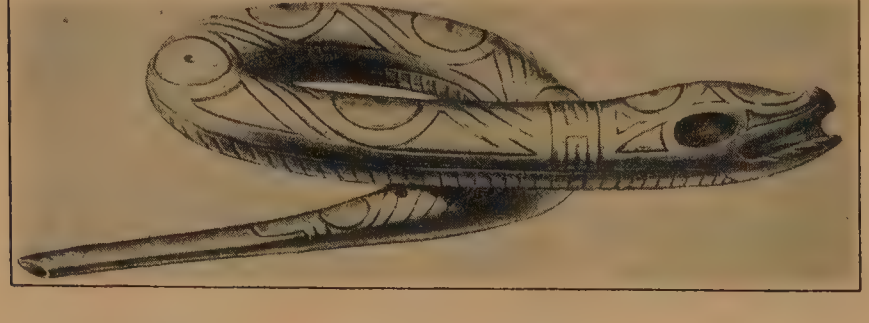
But it seems more probable that this universality is due to derivative origin, and this was the theory maintained by Mr. Fergusson but one which he appeared ready to abandon if the serpent mound in Adams County should indeed be proved to be genuine, as appears in our first quotation from his work. His theory was that the reverence for the serpent originated among what he called the Turanian races which seemed to have included all that the Aryan and Semitic races among which serpent worship was much less prevalent than among the other races. But it would seem that the occurrence of serpent worship among the North American Indians would support rather than oppose his theory for they are closely allied in language and social customs to the races that Fergusson called Turanian while there is abundant evidence that the American Indians reached this continent from Asia by the way of Behring Straits and the Aleutian Islands, so that it is most natural that they should bring with them and perpetuate the most primative forms of religion. Like the Swastika Cross[5] whose occurrence in the mounds of Ohio points to a connection in the dim past with some of the ancient civilizations of the Old World.

So the prominence given to the serpent by mound builders in these enormous symbolic structures points to a common origin with the primitive races of the Old World in prehistoric time. The discovery of this serpent mound in Warren County adds in geometrical ratio to the force of the testimony borne by the Adams County mound.

GEORGE FREDERICK WRIGHT.

Oberlin, Ohio.

[5]See RECORDS OF THE PAST, *The Swastika*, Vol. VI (Aug.-Sept. 1907), pp. 236-244.



SERPENT FROM SANTO DOMINGO ABOUT 1/3 NATURAL SIZE

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FORGERIES AND COUNTERFEIT ANTIQUITIES*

EVER since there has been a desire to collect objects, of no matter what description, there has been an equal ambition on the part of certain people to meet the demand by making spurious imitations. At no time has this been carried out so successfully or on so large a scale as during the present century. No matter in what direction a collector may be obtaining specimens, whether coins, medals, flint or stone implements, Egyptian or Peruvian antiquities, china, carved oak chests, antique silver, engravings, paintings, or ivories, he must be on the *qui vive,* or he will be "taken in." This has been the experience of most expert collectors, and some of the leading museums of England and abroad have also been victimized, sometimes to a very serious extent.

During the past few years several examples have been brought under my notice, and as a warning to collectors, there is in the Hull Museum a special case set apart in which these forgeries are exhibited.

In looking up the history of forgeries, one finds that the system is by no means a new one. Six hundred years B. C., counterfeit coins in the Grecian States had attained to such a serious extent that by the laws of Solon persons detected in the crime were punished by death, a punishment which was still enacted in the time of Demosthenes, who lived 250 years later. In ancient British times in our own country, not only were the well-known artistic coins of Philip of Macedon copied by Gaulish traders again copied in pure gold by the Britons; but the early occupants of these islands also made copies in base metal, which were gilded and circulated in lieu of the genuine article! An instance of this kind recently came under my notice when examining the collection of coins formed by the late Tom Smith at South Ferriby. In addition to one or two staters of pure gold, there were a few of base metal gilded, which had apparently been struck from the same dies as the genuine ones, but they were unquestionably contemporary forgeries. The Romans, too, who have left us so many thousand examples of their coinage, were expert forgers, and even in their day punishment by death was meted out to those found guilty. With regard to the Roman coins, in addition to the enormous variety issued by the State, it must be remembered that there were numerous private issues of the great Roman families. Of the latter alone about 3,000 types are known at the present time. Under these circumstances it will be seen that every opportunity was offered to the expert forger.

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*Reprinted from Hull Museum publications, No. 54.

Amongst bronze coins, which were so exceedingly common, forgery was not so frequent, as it was hardly worth while; but amongst the silver pieces (*denarii*) counterfeits were numerous. Sometimes the silver was mixed with a large proportion of baser metal, but frequently the coins were simply plated. From South Ferriby we have a number of coins of this character. Coming to later Anglo-Saxon times, false coining was looked upon as a capital offense, and from then until the last century, when the famous Halifax coiners were put to death for counterfeiting, the same method of dealing with the culprits was indulged in.

In the Hull Museum is a coin which professes to be an English penny of Richard III. Another coin which is frequently passed off as genuine is the shekel of the Scriptures. This one meets with frequently in different parts. It is simetimes made of silver, sometimes of bronze, and sometimes plated. On one side is a chalice, from which vapour rises, and on the other an olive branch. It should be noted that the characters are in Hebrew, whereas no genuine coins of that period are known as having Hebrew characters upon them.

Even at our leading London auctioneers, some years ago, an enormous collection of "ancient gems," comprising nearly 3,000 lots, and occupying seventeen days, was dispersed. Up to the time of this sale this collection was held to be one of the finest of genuine antique gems extant. It has since been ascertained, however, that the specimens were forgeries, the work of Italians of comparatively recent times.

Perhaps the greatest market for forgeries is in the Egyptian bazaars, where, in addition to some really clever imitations, there are those that are of a most palpable nature, and of such careless workmanship that it is surprising any sensible being would pick them up. Like the famous bullets on the field of Waterloo, these objects are sometimes planted in the sand, and excavated by the Arabs in front of the eyes of the tourist, who delightedly brings home to England or America a collection of curios which had been made in his own country, and possibly shipped to Egypt by the previous steamer! Without a word of exaggeration, tons of these "fakes" are imported into Egypt, where they are eagerly snapped up and brought away by collectors. In addition to the various pendants and ornaments, such as occur in the graves of the bygone princes and kings; scarabs, "small offerings" in the form of mummies, casts in clay, and innumerable other objects, even including "full-sized mummies" themselves, are "faked." Of a somewhat similar class is an artistic bronze lamp, with two holes for the wick, and the Christian monogram for a handle. It is before me as I write. This is supported by a chain, and the lid of the lamp consists of an eagle (?) with outstretched wings. To give this specimen an antique appearance, it has been dipped in a solution which has already come off the chain with what little handling the specimen has had; but it is interest-

ing to note that a piece of string which keeps the lid in place has also been stained green, and is, consequently, as antique as the rest of the object!

No one knows better than do collectors of old china how easy it is for facsimiles of Old Worcester, Chelsea, Dresden, Sèvres, or other well-known kinds, to be made. The experts at making copies are able to imitate the shapes, glazes, colors, designs, and even put the marks of the particular pottery upon the pieces, in this way making it exceedingly difficult to distinguish the genuine from the spurious article. He is an exceedingly clever collector who can boast that he has not been deceived, or even can be sure that he does not possess some "fakes" in his collection. The famous Wedgwood ware is also extensively copied, and one occasionally finds even obvious foreign copies labelled in shops as "Real Wedgwood."

In the matter of antique silver, methods of making copies are many. Sometimes a chalice, loving-cup, or other object, is entirely copied from a genuine example, and with a little burnishing, scratching, and even damaging and repairing, the modern piece is made to look old. In some cases the bottom of an old cup, upon which the hall-mark is placed, will be carefully cut away and neatly attached to a much heavier and larger piece of modern make, in this way passing off the modern silver at an enhanced price per ounce. I have recently had through my hands a massive pair of "Queen Anne" tea-caddies, the thin pieces of silver at the bottom of which, only, were of that period. In some cases the hall-mark, etc., from a small piece of silver will be cut out and neatly soldered on a large modern piece, in this way giving apparent age to the larger example. An expert, however, can easily detect this sort of thing.

At the present time second-hand shops are crowded with copies of old Battersea enamel snuff-boxes, copies of old Sheffield plate, and silver potato-rings—in fact, scores of objects might be mentioned which are being palmed off on the unsuspecting public, and, as a rule, one finds the dealer quite prepared to ask for and take the price of a genuine article for a modern copy! Recently I had a call from a pseudo-musician, who had three violins for sale. These he wished me to examine, and printed on a dirty piece of paper stuck inside one of them the word "Straduarius" could be distinctly discerned. The violin itself was worth a few shillings. On asking him which he wished to sell, I found that he wanted five pounds for the alleged "Strad," and half a sovereign each for the other two. He did not know why the one should be worth so much more than the other two, but had been told that he could get five pounds for it. I left it with him to try elsewhere. It is not the first "Strad" of this kind that I have seen.

As for "genuine old masters" and "valuable" paintings of all manner of description, they appear to be as common as can be, judging from the numbers that are submitted to one during the course of a twelvemonth.

Recently we had presented to us the brass matrix of a seal, which was very much knocked about, but on close examination of the impression the letters SEVERI . D . IMP . AVG . were made out. Eventually, it was seen that this antique gem was nothing more nor less than the bronze plug which had occupied the cup in a bronze casting, and which had been cut and thrown away. Upon this some one had cleverly worked the letters already given, and had thus made an old "Roman" seal.

Perhaps one of the most notable instances of making forgeries on a large scale occurred fifty years ago, during the construction of some new docks at Shadwell, when some extensive excavations were made. In 1857-58 some London dealers in antiquities purchased from the workmen a number of remarkable objects in lead and brass. These were corroded, and appeared to have all the signs of great age. The dealer referred to them as "pilgrims' signs," a name given by Mr. Roach Smith to somewhat similar objects.*

Mr. Roach Smith, in his *Collectanea Antiqua,* published at least one article upon these objects, and, notwithstanding certain anachronisms, he held them to be genuine. With regard to the irregularities of the lettering, etc., these were explained by the fact that they had been imported from abroad during the reign of Queen Mary, and were copies of earlier examples. The members of various learned societies at the time investigated the matter, and the Secretary of the British Archæological Association examined no fewer than 800 of these "pilgrims' signs," and from the sales, etc., gathered that there were at least 12,000 in circulation. It was shown, however, that they were forgeries, and many amusing episodes were related in connection with their investigations. The plaster moulds for making them were secured, and the methods of giving an antique appearance were gradually elicited from two illiterate laborers named Billy and Charlie respectively. From this fact the forgeries became known throughout the country as "Billys and Charlies."

Half a century has passed since then, and a new generation of antiquaries is once more being inundated with numbers of the same forgeries, which seem to be turning up again in some quantities. I have recently had submitted to me specimens from Doncaster, Selby, and other places, and in our museum collection we have nine examples which were formerly in the possession of the Literary and Philosophical Society at Hull, by which the specimens were greatly prized. These may be taken as typical "Billys and Charlies," though in addition there were bishops on horseback, spear-heads, daggers, seals, and rings. All the specimens in our museum are of lead. We have a medallion upon which is a representation of a head surmounted by a spiked crown,

*A mould for making *genuine* "pilgrim's signs," with a representation of the Archbishop of Canterbury on horseback, was found at Hull some years ago, and is figured in *Hull Museum Publications*, No. 3, p. 6.

after the style of the Roman emperors. This object is 4¼ in. in diameter, and is provided with a loop at the top for attachment. It is dated 1098, in *Arabic* numerals! Around the head the lettering runs as follows, in some cases the letter being the wrong way about—Inner circle: MPQAMOSMNOPCSMOAMC. Outer circle: FSCAPMSOASQDOTAMOR. MOPMC. On the reverse are two mailed soldiers fighting; one has just dropped his dagger and is being "felled." The lettering round the edge reads: CCC PMC AS M Y; and in the exergue: O:M*C.S.

One of these, 3 in. in diameter bears on the obverse a bishop in peculiar dress blessing some individual, and the lettering reads: IIIPMORTQNMODNIII MGONEOMNMSNENDQ. On the reverse is an eagle (?), with a large key in each claw. It bears the date 1020 at the top, and the lettering reads: MOADMEPMNDOAPOMPUNUTMESNQNDN. In this medallion, as in the previous one, many of the letters are the wrong way about.

Another example is shield-shaped, and on the obverse is a crowned head, with indistinct initials, one on either side. The lettering reads: SMOSRNACSMRPOSROPOMRPMC. On the reverse is a mailed warrior standing "attention" with a spear, the head of which is as long as his body. In the "field" are the letters CC S. Under the loop is the date 1021, and the following is the inscription: ROSMC2QAMSPCMbCSMO-PAMC.

The fourth medallion has a place for attachment, with a rectangular opening, and surmounted by a cockerel at full length. On the obverse is a representation of a king, with a sword in his right hand, and wearing a crown with four spikes. At each side appears to be a pedestal surmounted by "human" figures. On the reverse is a knight in tight-fitting chain-armour, running for all he is worth. The legends surrounding the medallion are as absurd as the previous examples quoted, and this object is dated 1100.

There are two lead vases. The first, with plain handles, is dated 102, though the lettering and the ornamentation is the same as that appearing on the pieces already described, and dated 1020, 1021, 1098, and 1100. The vase is not made to stand, having a rounded base. It is 6 in. high, 3½ in. in width, and about 1 in. in breadth. In the centre of one side is a grotesque face, the eyes and nose being after the style represented on old Scandinavian antiquities; whilst on the reverse a somewhat similar head is surmounted by the letters MSOC. The neck and edges of the vase are ornamented by representations of leaves, and the opening at the top is lozenge-shaped.

The other example has more elaborate handles, which, however, are of precisely similar make, and the vessel is ornamented with precisely similar leaves to those of the other vase. In this case, however, the date is 1031. It has a flat bottom, and there is a crude representation of an angel on each side of the vessel. This specimen is not so flat as the preceding, and the mouth is lenticular. Each side of the

neck is ornamented by seven pellets arranged differently. These may or may not have some religious significance. The lettering above one of the angels reads SCMAb, probably the name of the angel.

In most parts of England, but particularly in the North, the vagaries of "Flint Jack" were pretty well known half a century ago. This individual was also known as "Fossil Willy," "Edward Jackson," "Bones," "Cockney Bill," "The Old Antiquarian," and "Snake Billy." This "very prince of fabricators of antiques," as Llewellyn Jewitt describes him, was born at Sleights, near Whitby, in 1815. His correct name appears to have been Edward Simpson, and his father was a sailor. In his youth he was employed by Dr. Young, Whitby's historian, and no doubt he then obtained a knowledge of geology and antiquities. He was considered to be a very intelligent young man, and first earned a livelihood by collecting and selling fossils. About 1843 he began to make copies of flint arrow-heads, and found that he could easily dispose of these at a good remuneration, being able to make *and sell* fifty good flint arrow-heads a day. His methods, however, did not stop here. Flint and stone axes, some perforated and of truly wonderful shapes; Roman breastplates; Roman milestones; fibulæ; coins; rings; seals; jet necklaces, etc., were turned out by him in thousands, and in those days they were easily disposed of as genuine. He then began making earthenware vases of unknown shapes and forms, and for these he secured good prices—a five-pound note being not an uncommon reward for an afternoon's work. In some cases he would even fill the vase with dark earth and charred bones in order to obtain more money. These latter he invariably stated to have obtained from a "toomoolo," which was his idea of the singular of the word *tumulus,* which he concluded was plural.

Flint Jack spent much of his time in museums, where he obtained his ideas for making his various forgeries, and he was wonderfully clever in the perfection and speed with which he could copy almost anything. Few are the museums and private collections which do not contain some specimens of his handiwork, and some might be named where his work may still be seen side by side with genuine specimens, from which they do not appear to have been distinguished.

His later days were spent in want and misery, brought on by his drinking habits, and he probably died in one of the workhouses in the north of England, though when and where no one seems to know.

In 1862 Mr. Thomas Wiltshire read a paper to the Geologists' Association on *The Ancient Flint Implements of Yorkshire and the Modern Fabrication of Similar Specimens.* In this Flint Jack's methods were described, and at the end of the paper we find the following note: "The person who attended the meeting, as above mentioned, for the purpose of showing the mode in which flint could be easily formed into determinate shapes, was then summoned to the platform. The pieces of common flint, by means of a crooked bit of iron, soon

became in his skilful hands, by what appeared to be the most careless blows, well-shaped arrow-heads of various patterns."

This was in the closing days of Flint Jack's career. In 1863 he was at last persuaded to have his photograph taken (having many times, for obvious reasons, declined to sit), and a reproduction of this is given by Mr. W. G. Clarke in vol. vi. of the Transactions of the Norfolk and Norwich Naturalists' Society. The same photograph seems to have stood for the illustrations which appeared in *The People's Magazine* (1867), *The Malton Messenger,* and other journals. Some years ago, however, I came across an accomplice of Flint Jack in Newark, who gave me a photograph, taken in 1873. This man, Mr. A. C. Elliott, informed me that he was an ex-police-constable, and, together with the photographer, "did a roaring trade" in selling the photographs of Flint Jack at one shilling each, the proceeds being shared by the photographer and himself, Flint Jack's portion being a pint of rum each morning so long as the boom lasted. Elliott then lived at Stamford, and a paragraph which appeared in the local paper, to the effect that Flint Jack's photograph had been secured, was copied by almost every paper in the country. The result was, so he assured me, that on some mornings over a hundred applications for copies were received.

Many of the objects which Flint Jack made were figured and described in Transactions of learned societies as though they were genuine. In vol. iii. of the Proceedings of the Geological, etc., Society of the West Riding of Yorkshire, 1856, is a paper by Thomas Wright, F.S.A., *On the Remains of a Primitive People in the South-East Corner of Yorkshire, with Some Remarks on the Early Ethnology of Britain.* This is illustrated by two plates of flint implements, the originals of every one of which had been made by Flint Jack, although this was only discovered a few weeks ago, when the collection there referred to came under my notice. Amongst the objects are such items as fish-hooks, saws, daggers, knives, chisels, discs, and some nondescript serrated objects, the use of which it would be difficult to imagine. In our collection, also, we have some fine axes made of sandstone, grit, etc., some of which have obviously had their finishing touches on a grindstone!

From the same source I have obtained a complete vase and some pieces of pottery, which are clearly of comparatively modern make, some of the pieces having been through a brick-kiln. One of these is obviously that figured in Wright's *Essays on Archaeological Subjects* (1861, vol. i., p. 29). Of this the author states that two urns found in the Bridlington district are especially deserving of notice. One "is barrel-shaped, with peculiar ornamentation, and was filled with black earth, in which was found a large bead of jet. An urn of a similar shape and character, and equally ornamented, is in the possession of Mr. Cape of Bridlington." Another vase, figured by Mr. Wright which was dug out in the presence of Mr. Tindall, but which was soon

after "dishonestly purloined" from him, appears also to have been of similar workmanship.

A much more clever forger, known as "Jerry Taylor," formerly lived at Hunmanby, near Filey. He made finer specimens than Flint Jack could. Taylor's work, however, was not so extensive, nor is it so well known.

In addition to the various specimens enumerated above are some forged coins dated early in the XVIII century, which were found whilst excavating one of the docks in Hull; an iron key, said to have been that belonging to Beverley Gate, Hull, but which is of quite modern make; etc.

THOMAS SHEPPARD.

Hull Museum, England.

RELICS OF THE PAST IN SOUTHERN MINNESOTA

FIFTY miles south of St. Paul and 3 miles west of Faribault in the southern part of Rice County, Minnesota, is a pretty sheet of water 3 miles in length and 1 in greatest breadth. The lake is one of a number which beautify the Cannon Valley, and all are drained by a small stream which was once a famous waterway for the early trappers and roaming Sioux. When the first white settlers came to Faribault in the fifties, Jean Faribault had a log house trading post by the northeast shore of Cannon Lake and the wigwams and lodges of a band of Santee Sioux stood in open view. They were known as the Leaf shooters (Wahpekuta) and they appear to have had for many years free range of the entire valley and much of the lake region round about. When more settlers came the trading post of Faribault was moved to the village which received the old trader's name, and after the Sioux outbreak of 1862 the Indians were removed and their village disappeared. A few old inhabitants still recollect the scaffolds which once held their dead, and are able to point to the place where their tepees stood. The white men platted the field and expected to make a city there, but now there remains only a single farm dwelling by that place and the waves break on a silent shore.

Yet the place has interest. It appears to have had a more ancient history still, for beside the few mounds which have not escaped irreverent hands and which are probably quite modern, there are indications that this shore was a habitation of men who dwelt here centuries ago. One spot especially seems to confirm this view. It is a long knoll overlooking the outlet of the Lake where, during the past 6 years, the writer has found dozens of flint arrow points, sherds of pottery, rare old stone axes, scrapers, leaf-shaped knives and fragments of bone. At a distance one might mistake the knoll for an

KNIVES FOUND NEAR OUTLET OF CANNON LAKE,
RICE CO., MINN.

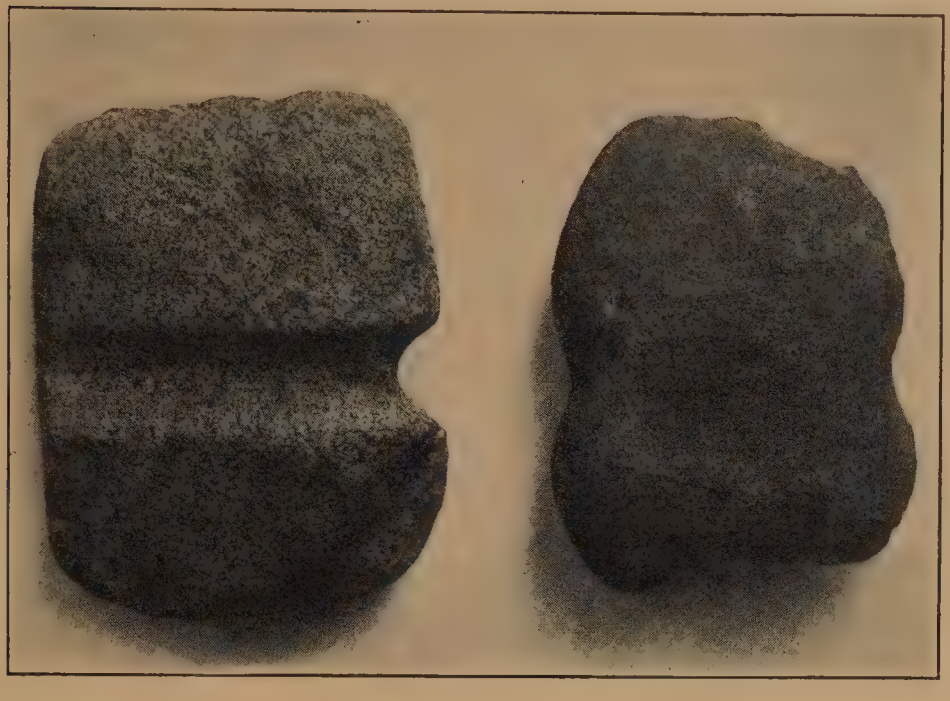
POTTERY FROM CANNON LAKE, RICE CO., MINN.

ARROW POINTS AND DRILLS FROM OUTLET OF CANNON LAKE

artificial mound, which it is not; for 18 to 24 in. beneath the sod we come upon the sand which overlies the gravel proclaiming the loess of glacial times, and which reminds us that when that old ice cap was thawing off our north temperate zone the Minnesota River made its short cut to the Mississippi through this very valley and poured forth a few miles north of where Red Wing has been built.

How interesting it would be if one could find an arrow point or axe in that drift! But one never does. Chips of flint lie close above it, but not below. Still the knoll as a village site must be old. There are reasons for believing it was once an island. Now only some modern road-making prevents it from being so in the spring. In the early days and within the memory of man the outlet was a famous pass for water fowl, and in the old days the fishing and trapping hereabouts was unexcelled. Those who say that the aboriginal man was wanting in sense of beauty, or fitness in selecting a home, to be convinced of their error have but to read the lines of their finely cut implements of war, to trace the plainest decoration on their crudest bowls or to stand at sunset on some commanding hill where little is left to tell of their ancient occupation but the red marks of their fires on the hearths which witness to their forsaken homes.

In studying the flint implements and remains of a people who have passed, one needs to exercise caution if he would speak of their age. But it seems to the writer that even the most cautious of students will find here evident traces of age which must throw the first occupants of this shore of Cannon Lake many hundreds of years in the past. There are certain types of implements which undoubtedly are of the design of the early Sioux and their immediate predecessors and some



STONE AXES FOUND NEAR OUTLET OF CANNON LAKE

whose lines are different and whose surfaces are so smoothed by years of exposure and erosin as to make it necessary to place them in a period belonging to a distant past.

The illustrations which accompany this article may not be sufficient to suggest this, except in the case of the photograph copy of the two axes one of which, found in the soft earth of the knoll, is barely a shadow of what it once must have been. The groove which once encircled it has almost disappeared.

Very few bone implements of any kind have been found on this knoll, but one—a bone needle—is well preserved. The rest are far gone. Some of the pottery is very old, and a bit of whetstone still shows the groove where the arrow shaft was laid. Types similar to most of these remains have been found on a lake shore some 5 miles away. Mr. J. V. Brower, so well known during his lifetime for accurate and faithful descriptions of many remains in our state, saw some of these and pronounced upon their peculiarities as denoting great age, and there can be little doubt that we have also the scattered remains of a primitive people on this Cannon Lake shore.

ANTHON T. GESNER.

Faribault, Minn.

NIAGARA AS A MEASURE OF POST-GLACIAL TIME

THE recent very thorough surveys and study of the Niagara gorge and falls by Professor Spencer, published in a large and finely illustrated volume* by the Geological Survey of Canada, bring again into consideration the very interesting questions of the age of these falls and the length of the present geological period, since the Ice Age.

Field work for this special report was begun by surveying the crest-line of the falls in October, 1904, and was continued during two years. New investigations were made by soundings at all the changing points of the gorge, even under the falls, and in the whirlpool; by borings to ascertain the character of buried channel beds, over which the river afterward flowed; by instrumental surveys of the old river banks and the position of the strata; by a review of the fluctuations of the Great Lakes, based on daily records for 50 years, as to their bearing upon the stability of the earth's crust, the lowering of the lake outlets, and the discharges of the rivers; and by estimating the effects of secular meteorologic changes.

Results of this work are noted by the author as follows: "The future effects on Niagara falls and upper lakes by the diversion of the water at the Falls have been ascertained. The recession of the Falls, from their birth to the present day, and for the future, has been determined, as well as their age. The existence of an ancient Erie outlet some miles to the west, not hitherto suspected, is a most important discovery in the history of the changes in the lake region. The International Boundary Line, showing the greater Falls to be in Canada, has been laid down on the map."

Geologists are most interested in the discussion of the recession of the falls, producing the gorge, which, if the rates of recession can be determined, measures the length of the Post-glacial period.

It is found that in 62 years, between the survey of the crest of the falls by Hall in 1842 and its survey by Spencer in 1904, the Canadian falls have lost nearly 8 acres, representing a total recession of 265 ft., the mean annual rate being 4.2 ft. Since 1678, when the earliest picture of the falls was sketched by Father Hennepin, practically the same

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*_The Falls of Niagara, their Evolution and Varying Relations to the Great Lakes, Characteristics of the Power, and the Effects of its Diversion._ By Joseph William Winthrop Spencer, M.A., Ph.D., F. G. S. Canada Department of Mines, Geological Survey Branch, Ottawa, 1907. Pp. xxxi, 490, including 59 page plates (maps and views from photographs) and 30 figures in the text (maps and sections), with a large folded map of the Gorge of Niagara River.

average rate of recession has been maintained, according to Spencer's identification of their place shown in that picture, the gorge having been lengthened about 950 ft. in these 227 years.

From the head of the Foster flats, 3-5 of a mile below the Whirlpool, the falls have receded about 4 miles in the last 3,500 years, as computed by Spencer, the height of the cataract having been mostly from 60 to 100 ft. greater than now. The volume of the river during this time is considered to have been approximately the same as now, being supplied from the drainage area of the four upper Great Lakes.

The earlier erosion of the lower part of the gorge, for about 3 miles, beginning at the Niagara escarpment near Queenston and Lewiston, is thought by Spencer to have been done by a much smaller river, receiving only the drainage of Lake Erie. Northward depression of this region, known by the gradual ascent from south to north along the beaches of the series of Glacial lakes in the St. Lawrence basin, and of the Glacial Lake Agassiz in the Winnipeg basin, leads him to ascribe to the Huron, Michigan, and Superior drainage, during a long period after the Ice Age, more northern courses of outflow, passing first by the way of the Trent valley into the Ontario basin, and later by Lake Nipissing and the Mattawa and Ottawa Rivers directly to the lower St. Lawrence. The Niagara River, if supplied only by the Erie basin, would have only about 15 per cent. or 1-7 of its present volume, so that its power of erosion would be relatively slight, especially while the Glacial Lake Iroquois occupied the Ontario basin at a level much above Lake Ontario, for some time greatly diminishing the height of the falls. Spencer, therefore, computes that a periol of 35,000 years was required for the smaller Niagara River of the Erie drainage to cut the first part of the gorge, a little less than 3 miles, from the escarpment to the head of the Foster flats.

With the later period of comparatively rapid erosion, extending the gorge through its upper 4 miles in 3,500 years, the entire duration of the river and of Post-glacial time, thus measured by the estimated rates of its cutting the gorge, is 39,000 years.

While thanking Professor Spencer for his again taking up this problem, deducing from it such a definite conclusion, some caution may be advised against the opinion that the last word needed concerning it has been thus written.

First, we may cite an excellent argument of Prof. G. F. Wright in favor of his view that no more time than 7,000 to 10,000 years has been occupied in the Niagara gorge erosion, namely, the narrowness of the lower part of the gorge and its steep and partly perpendicular rock walls, apparently not much older than the walls of its upper part, from the Whirlpool to the Falls. If the extreme lower part were ten times older than the upper part, having been exposed to rains, frost in winter, and the summer's heat, during 30,000 years or more, we should certainly expect much greater effects of rock weathering there, reducing the steepness of the cliffs on each side.

Second, a good argument for only a very brief duration of outlets eastward from Lake Huron is found in the surveys of the shore lines of the Glacial Lake Agassiz by the present writer. The earliest and highest beaches of that ancient lake have a northward ascent of about a foot per mile along their explored extent of about 400 miles; but the latest and lowest of its beaches, formed while the central part of the waning ice-sheet yet remained as a barrier on the country traversed by the Nelson River, are very nearly horizontal. The differential uplift of the Lake Agassiz basin is thus proved to have been nearly completed while the contintental ice-sheet was being melted away. Similarly a comparison of the higher and lower beaches of the Laurentian glacial lakes, which preceded the present Great Lakes, proves that the crustal uplift there was in progress and was nearly completed during the closing stages of the Ice Age. It is wholly inconsistent with these observations, made in contiguous parts of our continental area, to suppose that the country east of Lake Huron continued to retain a large part of its Late Glacial depression through 35,000 years after the departure of the ice there, and that only 3,500 years ago a large uplift there turned the drainage of the 3 upper lakes southward through Lake Erie, enlarging the Niagara river, and causing its erosion to attain the present relatively rapid rate.

Before accepting the decisions of Spencer for the age of Niagara Falls, the reader should go over the numerous former studies of this question by Lyell, Hall, Gilbert, Wright, Pohlman, the present writer, and others, which, like the study of St. Anthony Falls by Winchell, and like many other estimates and computations of the duration of Postglacial time, seem to converge into a demonstration that the great continental ice-sheets melted away between 10,000 and 5,000 years ago.

WARREN UPHAM.

St. Paul, Minn.

PRESERVATION OF THE MAN MOUND, WISCONSIN

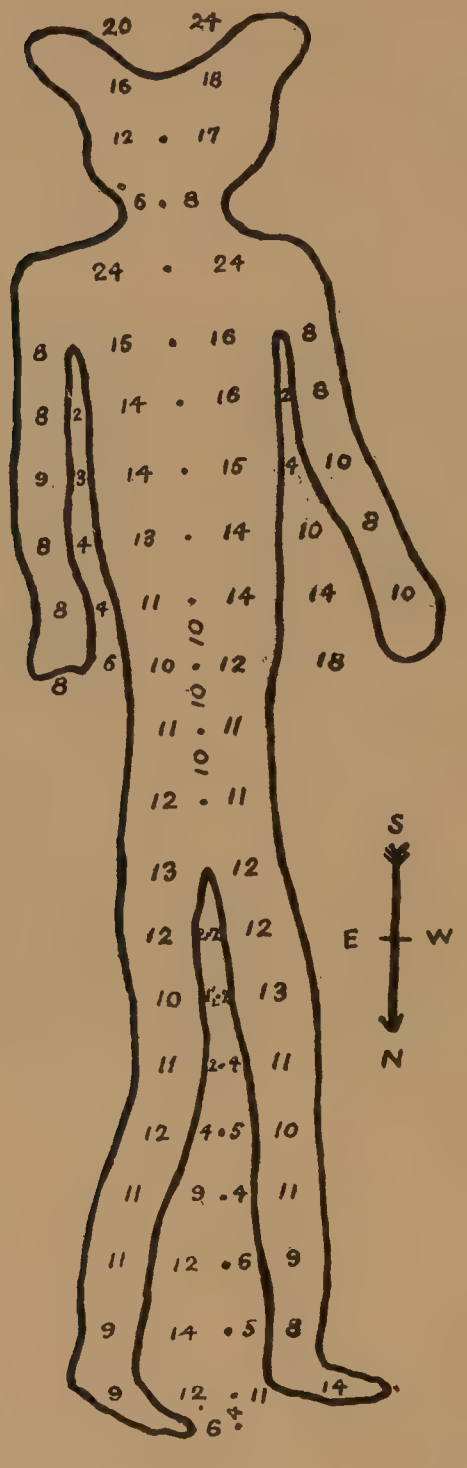
THE unveiling of the tablet at Man Mound, near Baraboo, Wisconsin, on August 13, marks another advance in the interest which is awakening in our country for the preservation of our antiquities. In October, 1907, the land on which Man Mound is located was purchased by the Wisconsin Archeological Society and the Sauk County Historical Society, jointly. The land has been converted into a park called Man Mound Park and a fitting bronze tablet erected. A short account of the history of the mound since its discovery by W. H. Canfield in 1859, was given in the address of Mr. Charles E. Brown, Secretary of the Wisconsin Historical Society, from which we abstract the following:

In the year 1859 the attention of W. H. Canfield, a pioneer civil engineer and antiquarian of Sauk County and coworker of Wisconsin's distinguished archæologist, Dr. I. A. Lapham, was directed by some pioneer settler to this great mound. He visited the locality and on July 23, 1859, prepared an accurate survey of it, an illustration of which he afterward caused to appear in his *Outline Sketches of Sauk County,* published by him in 1861.

TABLET AT MAN MOUND UNVEILED IN 1908

He deemed the mound of sufficient importance to report its discovery to Doctor Lapham, who published a brief description and figure of it in an article appearing in Vol. 4, *Wis. Hist-Colls.,* of the year 1859, in which he said:

"I wish to announce the discovery by Mr. William H. Canfield, near Baraboo, in Sauk County, of an ancient artificial mound, or earthwork of the most strange and extraordinary character of any yet brought to light. It represents, as will be seen by the accompanying drawing, very clearly and decidedly, the human form, in the act of walking, and with an expression of boldness and decision that cannot be mistaken. The figure is no less than 214 ft. in length; the head 30 ft. long; the body 100 ft. and the legs 84 ft. The head lies toward the south and the motion is westward. All of the lines of this most singular effigy are curved gracefully, and much care has been bestowed upon its construction. The head is ornamented with two projections or horns, giving a comical expression to the whole figure. The arms and legs are too short for the proper proportion, and the lower part of the body is too narrow, but with these exceptions the general proportions are good."



MAN MOUND AS SURVEYED BY W. H. CANFIELD IN 1859

In more recent years, brief descriptions of the Man Mound by Dr. Stephen D. Peet appeared in Vol. I of the *American Antiquarian,* and in *Emblematic and Animal Effigy Mounds* (Preh. Am., V. II), of which he is the author. In the latter work he offers the suggestion that the Man Mound bears a resemblance to some of the descriptions of and may have been intended by its ancient Indian builders to represent the powerful Dakotan divinity, Hekoya, who is frequently

shown in their picture writing as having his head surmounted by a pair of horns.

The mound has been frequently described by other authors in other articles and publications and it is largely through these its existence is now known not only throughout our own state and other states, but also in foreign lands.

During the year 1905 when the Messrs. A. B. Stout and H. E. Cole were conducting an archæological survey of the mounds and other aboriginal evidences in Eastern Sauk County for the Wisconsin Archeological Society they visited the site of the Man Mound and became greatly impressed with its interest, importance and value. They also learned upon inquiry that the owner of the land, which was then overgrown with wild vines, brush and small trees, cared nothing for the great earth work and intended to soon grub and break up the ground and to place the tract under cultivation. With laudable zeal they endeavored to create an interest in the preservation of the mound by the acquirement of the property. They appealed to both the Wisconsin Archeological Society and the Sauk County Historical Society which appeals were favorably received and plans for its preservation gradually matured.

An option on the property was secured by Mr. Stout and at a special meeting of the Executive Board of the Wisconsin Archeological Society, held in Milwaukee on December 27, 1906, he appeared and introduced the matter of raising by popular subscription a special fund of $300.00 for its purchase and improvement. His proposal was received with enthusiasm and it was decided to appoint two committees, one consisting of local and the other of Baraboo members, for the purpose of securing the required amount.

The committees named were the Messrs. A. B. Stout, H. E. Cole, and Jacob Van Orden of Baraboo, and E. P. Nemmers, T. D. Schilling and Charles E. Brown. Mr. Schilling being unable to serve was succeeded in his place on the committee by Miss Julia A. Lapham, of Oconomowoc.

The Sauk County Historical Society had already promised its aid, and through the enthusiasm of Miss Lapham, then and now chairman of its landmarks committee, the assistance of various clubs of the Wisconsin Federation of Women's clubs was obtained. Each organization issued appeals for subscriptions to its members and friends and at a meeting of the Executive Board of the Wisconsin Archeological Society held on July 8, 1907, Secretary Charles E. Brown was able to report a total of $240.85 collected from all sources and the preservation of the Man Mound was assured. Other subscriptions followed and soon the entire amount of money desired had been obtained. In the meantime it was learned with regret by the other societies that the Wisconsin Federation of Women's clubs not being incorporated could not legally share, as had been intended, in the title to the property.

On October 12, therefore, the tract of land including the great Man Mound was purchased from Alba Hoege and wife, Nellie Hoege, for the sum of $225.00 by the Wisconsin Archeological Society and the Sauk County Historical Society, the Messrs. Jacob Van Orden and H. E. Cole acting as the agents of the societies.

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TERRA COTTA HEAD FROM OLD SAMSOUN

ASSYRIAN INFLUENCE IN ASIA MINOR

THE accompanying illustration gives a picture of a terra cotta head about 4 by 6 in. in size, made of gray clay, and found not long since at Old Samsoun on the coast of the Black Sea. The original belongs to the Anatolia Archæological Club of Marsovan, Turkey. Amisus was an important city from the earliest times, and was supposed by Strabo to have been founded by Milesians. The original site of the city, now devoted to wheat fields, was truly magnificent. It occupied a level table-land approximately a mile by half a mile in extent, with its northern tip laved at the foot by the Black Sea waves, the ground dropping abruptly away at the two sides and narrowing at the rear until a single castle would command the approach.

The special interest of this head lies in the fact that it seems to betray an undoubted Assyrian influence. Professor Sayce showed in the *Contemporary Review* for June, 1907, that there was an Assyrian military colony located at Kul Tepe, near the subsequent Cesarea Mazaca, in the Abrahamic age. Dr. David M. Robinson in his history of "Ancient Sinope" argues, (pp. 145 ff.), that "The early foundations of Sinope are probably Assyrian," and he presents a variety of evidences in support of his claim, though Sinope also has often been supposed to have been first settled by Milesians. Now, if I am not mistaken, this picture brings to light another link in the chain of evidence that there was Assyrian influence in Asia Minor, even as far as the Black Sea, before the days of Greek colonization. Assyria was once at home in Amisus.

GEORGE E. WHITE.

Marsovan, Turkey in Asia.

PALESTINE EXPLORATION FUND

THE quarterly Statements of July and October continue to describe the careful and painstaking work of Dr. Macalister and his laborers in the excavations at Gezer. His superior knowledge and judgment, as well as the thoroughness of his work in unearthing the treasures of this old city of the Cannanites, must prove of value to all archæological students, and especially to those interested in Palestine research.

It has been known for some years that Meren-Ptah, the Egyptian king of the XIII century B. C., had seized Gezer. But now there has come to light, an ivory pectoral with a figure of the king adoring the god Thoth and the cartouches of Meren-Ptah. This was found on the rock at the northern end of the new trench recently excavated in the central valley. The straight side of the pectoral is 2¼ in. long, and the ivory still retains the green enamel which filled the broader parts of the cuttings. This object is specially interesting in connection with the allusion to a capture of Gezer on the famous "Israel" stele; it is also the first time that Doctor Macalister has come in contact with Meren-Ptah himself inside the city.

A feature of the Gezer excavations from the beginning has been the number of small votive altars found in the upper stratum, some apparently meant for incense-burners showing the marks of fire. Several new ones bearing very curious figures have lately been uncovered. The conjecture is thrown out by Doctor Macalister that they came from a temple, possibly the one destroyed by Simon Maccabæus.

In a cistern with pottery contemporary with the XVIII Egyptian dynasty fragments of three fine alabaster vases were found much

broken but very nearly complete; also a beautiful saucer 2 in. high and 6⅝ in. across. It is in many small pieces, but fortunately, enough have been recovered to reconstruct the whole with certainty. It is made of a porous porcelain of greyish white color; the designs are insized and inlaid with cyanose, whose delicate blue color shows effectively against the white background. The bottom is perfect; showing the design on the underside which is elaborate. In the trench also a collection of ornaments for the fingers, ear, and arm, in silver were found deposited in the bottom of a broken jar, also two scarabs characteristic of the XII dynasty, bearing the spirals and symetrically disposed symbols characteristic of that period. On the same day and on the same level a short distance from where the pot was deposited, Doctor Macalister found a scarab of one of the Hyksos kings.

At the time of writing the October report, work had been suspended for one week to allow the fellahin to finish their summer harvest of millet and sesame and this Doctor Macalister believes will be the last interruption before the work closes. The permit for the excavations in Gezer, always so difficult to obtain, lapses in March, until which time if sufficient funds are contributed, the work can be pushed with great vigor.

All subscribers receive the illustrated Quarterly and the Secretary would be glad to have the list extended.

MARY A. WRIGHT,
Honorary U. S. Secretary.
42 Quincy Street, Cambridge, Mass.

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BOOK REVIEWS

SUPPLEMENTARY PAPERS OF THE AMERICAN SCHOOL OF CLASSICAL STUDIES IN ROME, VOLUME II*

FOUR papers prepared by members of the American School of Classical studies in Rome appear in the second volume issued by the Archæological Institute of America under the above title. The expense of this publication was met by a grant from the Carnegie Institution.

The first paper on *The Advancement of Officers in the Roman Army*, is by George Allen. He presents a plan indicating the relative rank of officers in the Roman army, for which he has used "only epigraphic material." "The present paper," he states, "is essentially an index to the inscriptional evidence for the advancement of Roman officers."

**Supplementary Papers of the American chool of lassical Studies in Rome.* Vol. II. By George Henry Allen, Charles Densmore Curtis, James C. Egbert, and Albert William Van Buren. Pp. x, 293. Illustrated. Macmillan Co., New York, 1908.

Mr. C. Densmore Curtis in his paper on *Roman Monumental Arches,* discusses briefly the origin of the "so-called 'triumhal Arch' " and "describes in chronological order such examples as still remain, or have been accurately described before their destruction." The term "triumphal arch" he considers as a misnomer, the indiscriminate use of which doubtless arose under the influence "of the reliefs on the Arch of Titus, and the inscription on that of Constantine."

Mr. Curtis classifies these arches under 5 periods. The first includes those of the reign of Augustus; the second, Tiberius to Hadrian; the third, Hadrian to Septimius Severus; the fourth, Septimius to Constantine; and the fifth, Constantine to the end of the Empire.

Albert W. Van Buren's transcription of *The Palimpsest of Cicero's De Re Publica* is the third paper and is designed to accompany the facsimile and not as an independent publication.

Inscriptions from Rome and Central Italy, by James C. Egbert, is the last paper. The inscriptions here described and pictured are ones which were discovered or brought to the author's notice in 1903-4, during which time he was Professor of Latin in the American School of Classical Studies in Rome.

A HISTORY OF THE ANCIENT EGYPTIANS*

THIS volume by Dr. Breasted is largely a condensation of his more exhaustive volume under the title of *A History of Egypt* which appeared in 1905 and was reviewed by us at some length. He has, however, brought it strictly up-to-date and made it somewhat more a history of the *"Egyptian People."* The book is characterized by its interesting and scholarly style. In regard to the relative age of Babylonian and Egyptian civilizations he concludes in favor of the latter. "The new-found evidence that the first and third dynasties of Babylon were contemporaneous with the second, has also settled the problem, whether the civilization of the Nile or of the Euphrates is older, in favor of Egypt, where the formation of a homogeneous, united state, embracing the whole country under the successive dynasties, is over a thousand years older than in Babylonia. We possess no monument of Babylonia, as Eduard Meyer recently remarked to the author, older than 3000 B. C."

Doctor Breasted adds a chapter of notes on the recent discoveries in Egypt. In one of these he refers to Winckler's Hittite discoveries in Asia Minor and notes that: "The recent evidence of a Hittite inva-

**A History of the Ancient Egyptians.* By James Henry Breasted, Ph.D. pp. xiii, 469. 4 maps, 3 plans. Charles Scribner's Sons, New York, 1908.

sion of Babylonia about 1750 B. C. (King KSEH, II, 148) shows that there was a great expansion of Hittite power at just the time when the Hyksos were entering Egypt." Concerning this fact he aptly remarks that the "Hyksos empire was thus thrown back upon Egypt." "Or," he continues, "was the Hyksos invasion of Egypt itself Hittite?"

SYSTEMATISCHE BIBLIOGRAPHIE DER PALÄSTINA-LITERATUR*

LITERATURE on Palestine is so voluminous that a Bibliography covering the whole field, both of books and current magazine articles, has been greatly needed. The task of preparing such a bibliography has been undertaken by Dr. P. Thomsen, of Dresden, Germany. The first volume has just been issued and covers the literature which has appeared in Europe and America during the years 1895-1904. Doctor Thomsen proposes to publish this Bibliography every fifth year, the next volume, for the years 1905-1909 to appear in 1910. The subjects include Ancient and Modern History, the Crusades, Historical Geography and Topography, Archæology, Modern Palestine, maps and pictures. An index of the authors cited with page references is a valuable addition to the work.

REMAINS OF GOSPELS AND SAYINGS OF CHRIST**

DURING the first and early part of the second centuries of our era there were numerous traditions both oral and written concerning the life, work and sayings of Christ, beside the four Gospels as now accepted. Although most of our knowledge of these has been derived from references to them by the early Church Fathers, usually to combat their authenticity, yet there have been discovered from time to time fragments of these so-called gospels and sayings, which are of considerable interest and of more or less value to the theological student. One of the best known of these fragments is doubtless the Egyptian Papyrus containing the *New Logia of Jesus,* which was discovered in 1897, a reproduction of which forms the frontispiece to Dr. Pick's recent volume.

The task of collating these fragments has been undertaken by Rev. Bernhard Pick, Ph.D., D.D., and the result of his work is a volume under the title of *Paralipomena.*

**Systematische Bibliographie der Palastina-Literatur.* Auf Veranlassung des deutschen Vereins zur Erforschung Palästinas bearbeitet von Peter Thomsen, Ph.D. I. Band, 1895-1904. Pp. xvi, 203. Rudolf Haupt, Leipzig and New York, 1908.

***Paralipomena, Remains of Gospels and Sayings of Christ,* by Rev. Bernard Pick, Ph.D., D.D. pp. xi, 158. Open Court Publishing Co., Chicago.

The author thinks that the Church in the second century "on the whole showed a good sense for the genuine and original." "But," he continues, "when we meet in the extra-canonical gospels with traits which are homogeneous to the Christ-picture of the gospels, let us not disregard them but rather look upon them, though cautiously, as an enrichment of the same." The fragments here presented for study he adds, are "no mere literary curiosity nor a barren study. For as the late Bishop Westcott said: 'There are some fragments which appear to contain true and original traits of the Lord's teaching, and as such are invested with the greatest interest.'" (p. viii.)

The following gospel fragments are given: The Gospel according to the Hebrews, The Gospel of the Ebionites, The Gospel of the Egyptians, The Gospel of Thomas, Matthias Traditions, The Gospel of Philip, The Gospel of Eve, The Fayum-Fragment, The Gospel-Fragments and Oxyrhynchus Logia of the Oxyrhynchus finds, The Gospel of Peter, Four Coptic Gospel Fragments, Some Manuscript Readings, and scattered sayings from 53 different authors or documents.

One of the most important and valuable parts of this volume is the comprehensive bibliography covering 56 pages. All students of the New Testament and even those who cannot claim to make it a study will be interested in this volume by Doctor Pick.

GOSPEL DEVELOPMENT*

A VALUABLE work on the comparison of the Gospels entitled *Gospel Development* has been prepared by Rev. Caleb Theophilus Ward. The volume represents a vast amount of work. In his arrangement of the parallel columns he has departed from the usual custom and has undertaken the more difficult task of placing similar ideas rather than similar words in juxtaposition. The author takes the "Gospel according to Mark as the standard, dividing it up into convenient sections, each relating to a distinct event, combining with these several sections everything of similar character to be found in the other Gospels; then arranging what is left after the same plan—first, of those passages which appear in the two remaining Synoptic records, and second, of those which are peculiar to each. As to the fourth Gospel, the few incidents that correspond with those of the first three are joined with them, to show the contrast in description; while the greater portion of its contents, including all the discourses, is appropriately placed at the end." (p. xi.)

**Gospel Development*, a Study of the Origin and growth of the Four Gospels by Mutual Comparison. In Two Divisions, Comparison in Language and Comparison in Subject, by Rev. Caleb Theophilus Ward, M.A. pp. xiii, 404. Synoptic Publication Co., Brooklyn.

EDITORIAL NOTES

GIFT TO THE BRITISH SCHOOL AT ATHENS.—Reports from London say that William Waldorf Astor has given $5,000 to assist the British School at Athens in carrying on its excavations in Laconia, Greece.

NEW ITALIAN ARCHÆOLOGICAL SOCIETY.—An Italian archæological society for work in Egypt is being formed. Among those supporting it, are Prof. Pasquale Villari, Senator Comparetti, and Prof. G. Vitelli, of Florence.

FOUNDATION SACRIFICE AT GEZER.—The skeleton of a youth who had been cut in two was found in one of the foundation sacrifices uncovered. As yet the motive for this sundering of the body has not been found.

MANUSCRIPTS LOST.—A number of valuable papyri belonging to Johns Hopkins University were so damaged by water in a fire in McCoy Hall on September 17 that they were rendered undecipherable.

TO EXCAVATE MEMPHIS.—The Egyptian Research Account expects to begin excavating Memphis this winter. The cost of the work of excavating the temple sites alone is estimated at $15,000 a year for 15 years.

MYCENÆAN TOMBS.—Doctor Dörpfeld announced early in the year the discovery of 3 Mycenæan tombs in the district of Marmara, Greece. Thousands of Mycenæan vase fragments and many metal objects of unexplained use were found.

ANIMAL DRAWINGS AT GEZER.—Mr. Macalister reports finding a cave at Gezer with very primitive drawings of animals. He says that they bear a striking resemblance to the sketches attributed to palæolithic man elsewhere.

EXCAVATIONS AT SAALBURG, GERMANY.—Several buildings near the villa at Saalburg have been explored recently. Work on the large rectangular structure already known shows that the southern part of it had 5 rooms and that 3 of these had hypocaustic heating. Many stamped bricks were found.

PREHISTORIC WRITINGS FOUND IN MEXICO.—It is reported that hieroglyphics upon the walls of a cave have been found recently in Espinaza del Diabola, Tepic, Mexico. This may prove valuable in the study of the history of the former inhabitants of that part of Mexico.

RECENT EXCAVATIONS AT GIZEH.—The work of the Egyptian Research Account at Gizeh has recently brought to light remains of the first 3 dynasties. The civilization appears to have been similar to that of Abydos. Stone vases as well as ivory and flint objects were found.

FORGOTTEN LANGUAGE DISCOVERED.—Manuscripts containing parts of the New Testament have recently been found in Eastern Turkestan. The language is unmistakably of Aryan origin, of the Indo-Germanic family, but there is no historical record of it.

TEMPLE OF SATURN AT DOUGGA, AFRICA.—At Dougga, French archæologists have recently discovered a temple of Saturn, with a large number of columns still well preserved. A statue of Athena with a girdle ornamented with the head of Medusa, and an Apollo nearly 10 ft. high are the most important finds. There were also some inscriptions.

HITTITE MONUMENTS.—W. A. Robinson reports the discovery of a monument on one of the mountain ridges northwest of Kaisarie, Asia Minor. It represents an eagle in granite perched upon a rock. The rock is cut so that from the side it looks like half of an arch. On each of 3 sides of the pedestal is carved a crouching lion in high relief.

PYRAMID OF LISHT.—The expedition of the Metropolitan Museum of New York City to the pyramid of Lisht has cleared the northern side of the pyramid and uncovered the entrance. Work has also been begun at the Oasis of Kharga, which it is believed will be important in the study of the Græco-Roman and early Christian periods.

RUSSIAN ETHNOGRAPHIC EXPEDITION TO KAMTSCHATKA.—M. T. P. Riabouchinsky at his own expense but with the active coöperation of the Russian Geographical Society, left St. Petersburg early in May for Kamtschatka. The expedition comprises 5 sections—viz. geographical, botanical, zoölogical, meteorological, and ethnological. The ethnological section will first visit the Aleutian and Behring Islands, not reaching Kamtschatka until the autumn of 1909. They will seek to discover traces of the oldest aborigines.

DOMESTICATION OF THE HORSE BY CAVE-MAN IN FRANCE.—M. Edward Piette has found carvings and drawings of the age of Cave-man which lead him to conclude that these cave-dwellers had domesticated the horse. A number of the drawings found in the cave of Dordogne and Sanders show horses' heads with bridles, which fact has brought him to this conclusion.

ABBEY OF MONT ST. MICHEL, FRANCE.—In 1874 the French Government placed the old Abbey of Mont St. Michel under the care of the Department of Fine Arts. On July 17, 1908, a second decree was issued placing the so-called "town ramparts" also under their care, so that they will now be treated as "Historical Monuments" and cannot be touched except by the consent of the Committee of Historical Monuments.

PLACE OF WOMEN AMONG THE HITTITES.— Doctor Winckler's studies of Hittite remains makes it clear that women played an important part in politics in those ancient days. As an example, there is extant a letter from "the wife of Rameses to her royal sister of the Hittites commenting on the treaty and expressing her satisfaction at its ratification." He inclines to the theory that the Hittites were an Indo-Germanic people, for certain references in tablets indicate an acquaintance with the gods of India.

METHODS OF WORK AT KARNAK.—The methods used by Maspero in raising the buried statues from the bottom of the pit at Karnak are interesting. The water is pumped out in the day time, but at night it is turned in again, to prevent the depredations of thieves. Most of the finds are from the period between the XIX dynasty and the Persian conquest, though some are of earlier origin. The deposit of statues took place after the Macedonian conquest, when the temple was restored and many votive offerings were buried to make room.

EARLY GREEK PAINTINGS.—At Pagasæ, near Volo, Thessaly, a large number of painted grave stelæ have been found. The paintings are fairly well preserved on about 200 of them, and 30 are in almost perfect condition. Their importance is largely in the light thrown upon the history of Greek painting. They are nearly all of the same type and belong to the Hellenistic period, as is proved by one bearing the epitaph of a soldier who died in the battle of Thebes in Phthiotis, 217 B. C. The color seems to have been applied directly to the marble.

ANCIENT INHABITANTS OF EGYPT.—Prof G. Elliott Smith, the Egyptologist, is reported as saying that Egypt and Nubia were very early inhabited by the same race which, with little if any change in physical characteristics, has persisted to the present day in

Egypt. The individuals were small, the average man being 5 ft. 3 in. tall; the hair was dark and wavy, not wooly; their heads were long and narrow. They shared the distinguishing characteristics of the people bordering the Mediterranean. There was some slight infusion of negro blood.

EXPEDITION FROM PHILLIPS ACADEMY TO THE OZARK MOUNTAINS.—During May, 1908, Mr. W. K. Moorehead and Dr. Charles Peabody had charge of explorations in the rock-shelters of the Ozark Mountains for Phillips Academy, Andover, Massachusetts. The explorers met with numerous traces of a comparatively primitive culture. Stone and bone implements were plentiful and well made, but the pottery was scarce and rude. There was a marked contrast between the Ozark field and the low-lying southeastern section of the state.

WORK AT OLYMPIA.—In April and May, 1908, work at Olympia between the Pelopian, Heræum and Metroum revealed a prehistoric stratum with the foundations of 6 houses, 4 of which have a similar plan—a semicircular apse attached to a quadrangular room. Most of the pottery is monochrome, hand made, and poorly burned. It is very much like the pottery of Leucas and Pylos. Stone implements were found. In the western court of the Prytaneum was discovered a stone foundation 42.6 ft. long and 9.8 ft. wide at the center and tapering to the ends.

THE SEVEN YEARS OF FAMINE.—One of the most interesting of recent discoveries in Egypt is that of the hieroglyphic record of the 7 years of famine, described in Genesis. Brugsch Bey, Maspero's colleague at the Cairo Museum, made the discovery and has deciphered it. The inscriptions tell that the Nile did not overflow for 7 years and that therefore the vegetation withered and failed, the land was devoid of crops, and famine, pestilence, and misery devastated the country. The date of this record is 1700 B. C., which is the date of the close of the years of famine as given in the book of Genesis.

THE SAWTELL AVENUE MOUND, CLEVELAND.—The last prehistoric artificial mound within the limits of Cleveland, in fact the last large mound in that vicinity, has just been removed. Originally it extended 75 ft. east and west, 63 ft. north and south, and was 10 ft. high. It was composed of red sand-gravel and clay. There were no bones and no objects within the mound itself. Trenches run beneath the mound to a depth of 5 ft. uncovered 6 skeletons at a distance of from 6 to 23 ft. from the center of the tumulus, and 4 to 6 ft. below the surface. Some charcoal lay immediately above the two skeletons nearest the center. The finds are now in the possession of the Western Reserve Historical Society.

EXCAVATIONS AT OLBIA.—Excavations on the site of ancient Olbia about 15 miles from Nicolaieff, Southern Russia, during August brought to light the foundations of what is presumed to be the fortress, lying north of the ancient site. A sepulchral slab 42 by 30 in. was found bearing a well preserved Greek inscription in red. The color is very fresh in this and in other of the inscriptions uncovered. A handsome vase of the IV or V century B. C. with heads of Amazons on one side and horses and men on the other, was found. From one of the tombs a "small gilded terra cotta Eros, with a high headdress" was taken. Another interesting find was a "gilded spindle of human bones."

MOUNDS IN PHOCIS, GREECE.—Several mounds near Elatea, in Phocis, have been opened as well as a large one near Chæronea. On this large mound and near it were the remains of neolithic dwellings, as well as many bones of animals, neolithic vases, stone implements and terra cotta idols. There may have been a temple on top at the earliest historic period of Greece. Remains of human skeletons were unearthed 8 or 9 ft. below the surface, indicating that the mounds were originally funerary. Some of the vases are of beautiful shape. One type is decorated in white on black, while another has red geometrical patterns on white.

MOUNDS IN MANITOBA.—Prof. Henry Montgomery, of Toronto University, has recently been investigating some of the mounds in Manitoba. He has found copper and seashell ornaments, indicating that this race had communication with those in the Mississippi valley. Although there are no traces of boats, Professor Montgomery believes that they made use of the river in their journeyings. Excellent pottery, as well as weapons, were discovered. The indications are that Manitoba supported a larger population formerly than now. At Pilot mound he discovered a painter's palette made of granite. It has a shallow bowl shaped to fit the left hand.

Earth works 2700 ft. long were also investigated. Professor Montgomery is of the opinion that they were used as a stadium from which to witness cremation ceremonies, evidences of which he found near by. No clue as to any connections of this people with other known prehistoric races was discovered.

APPENDICITIS AND OTHER MALADIES OF ANCIENT EGYPT.—The Royal College of Surgeons at Lincoln's Inn Fields, England, has recently been presented by the Egyptian Government with a pathological collection showing "the injuries, maladies and peculiarities of the people who lived in the Valley of the Nile from prehistoric until early Christian times—a period of about 5,000 years." "In a post-Roman grave a woman was discovered so well preserved that it is possible to say that she suffered from the condition now known as appendicitis. This is considered to be the earliest evidence of this malady."

Fractured bones in the collection show that the ancient surgeons were very successful in treating such injuries. The ulna is the bone most often found to have been broken and set. This is accounted for by their peculiar style of fencing. "Gout was found in an early Christian subject, but no irrefutable evidence is forthcoming of tuberculosis."

WORK AT SUSA.—During the last 3 months M. de Morgan has been continuing his researches in Susa and has met with success equal to that which crowned his earlier efforts on this site. Terra cotta playthings—"tiny chariots, rams, etc., mounted on rollers"—have been found which show the similarity of such toys pulled around the streets by Chaldean children 5,000 years ago with those of our own dav.

The old town forms, at more than 75 ft. below the present level of the soil, and immediately above the original soil a layer of from 12 to 15 meters thick. In this long zone, the antiquity of which is attested by irrefutable inscriptions, have been found an immense quantity of objects—relics from the cemetery, painted vases of curious design, spearheads, axes, saws, and cooking utensils in bronze, alabaster (sic) weapons of the most refined workmanship, and notably a vast collection of admirably carved or graven images. There are hardly any specimens of gold or silver or of jewelry, the town having been sacked over and over again. There is a fine statue of King Karibusha-Shushinak, whose throne is adorned with bas-relief lions heraldically treated, a superb head of an hereditary priest-prince, a fine sculptured stele of Sargon the Elder about 3800 B. C. representing warriors and captives, and vultures feeding on corpses.

INDIAN RELICS FROM COMANCHE, TEX.—Mr. W. Straley, who has recently moved to Nelson, Nebr., from Comanche, Tex., has just published a little booklet on the Indian sites and relics found near his former home. It is specially interesting because it indicates an awakening of interest in local archæology.

On Willow Branch, a tributary of Mercer's Creek, 6 miles south of Comanche, there is an extensive prehistoric burial site. "The graves are covered with an arch [?] of limestone, which protrudes above the surface of the ground, and form a circle some 10 or 15 ft. in diameter. This limestone had to be carried some distance, as there is none in the immediate vicinity." One of the graves opened contained a partially decayed skeleton in a sitting position, with the chin between the knees. It was only a few feet below the surface.

Arrow and spear-heads are numerous near a spring with a constant flow and along the streams in this neighborhood. They are of flint, limestone and slate. There are also hammers, pestles, scrapers, etc.

THE SIZE OF BABYLON.—The German Oriental Society by its exploration of the walls of Babylon has upset the old ideas of the great extent of the city. A wall 25 ft. thick, with buttresses every 60 ft. was found and traced. The enclosed area was only about one square mile. Fewer gates were discovered than tradition had attributed to the city.

In the "palace" mound were two palaces, one built by Nabopolassar and one by Nebuchadrezzar. A street separated them. The

newer of the two is on the eastern side and consists of several groups of chambers arranged around quadrangles. The royal quadrangle, entered by a double gateway, is the larger; facing this on the south is the royal audience chamber of Selamlik. The facade of the chamber was richly decorated with floral designs in enameled brick. At the south end of the room is a deep alcove, where the throne was placed. The buildings were characterized by dull, monotonous brickwork, without decoration.

PUEBLOS IN THE RITO DE LOS FRIJOLES CANYON.—During the summer just past, Dr. Edgar L. Hewett has been conducting excavations in the Frijoles Canyon, 20 miles west of Santa Fe, New Mexico. The great pueblo there is circular, built around a court. It is 7 rooms deep and although it originally contained from 700 to 800 rooms, now only about 400 can be restored. Forty were cleared last summer so that the type of the ruin became apparent. There were 3 kivas or ceremonial rooms within the court. The smallest of these, 30 ft. in diameter, was excavated and proved to be similar to the kivas of modern pueblos, with a shaft and vent hole on the east wall. Each clan seems to have had its own sanctuary, but there are indications of a general sanctuary as well. This, the largest of the 3, is an enormous underground circular structure of stone, entered through a trap-door in the roof. In the center of the floor was a fireplace through which men from the underworld were supposed to emerge so as to remain in the kiva until their eyes became accustomed to the light.

Further down the canyon is another circular structure which, at first thought to be a reservoir, proved to be another kiva. It is 42 ft. in diameter, the largest subterranean sanctuary yet reported in the Southwest. Four holes for roof supports were found around the fireplace. Beside the air shaft to the east, there was one to the west. There is a double wall of tufa blocks around this kiva.

NEW INSCRIPTIONS FROM BEERSHEBA.—In May, 1908, while returning from Petra, Mr. Benjamin W. Robinson purchased two Greek inscriptions which came from Beersheba. One is a building inscription, translated as follows: "This new work also arose from the same generosity of Stephanus, the wisest and most renowned chief-physician of the Royal Palace." No date is given, but the general character of the writing seems to point to the IV century A. D.

The other is an imperial edict or tax-list. It appears to have been translated from Latin into Greek. The left hand side is incomplete. The inscription may have been continued on another slab. This is especially important as it throws some light on a similar fragment found by Mr. Macalister at Beersheba and discussed in the *Palestine Exploration Fund* in 1902. Mr. Macalister feels confident that these two fragments belong to the same inscription.

In summing up his preliminary discussion of this new fragment in the *American Journal of Archaeology,* Mr. Robinson says:

We have, then, two fragments of an imperial edict which regulates the yearly tax or pay of certain places and officials of southern Palestine. The edict may have been published upon the occasion of a change from payment of tax in kind to payment in money. I am informed that a third fragment is now in the hands of the Dominicans in Jerusalem. It is to be hoped that its publication may not long be delayed.

CAMP SITE NEAR NELSON, NEBR.—Mr. Straley, in his booklet on *Paragraphs from a Collector's Note-book,* gives the following description of a camp site near Nelson, Nebr.:

On Elk Creek, about one mile southwest of the village of Nelson, Nuckolls County, Nebraska, in a field on the summit of a ridge is found a place that has the appearance of being at one time the camping ground of the Red Man.

In the several visits I have made the site I have been successful in securing a number of arrow-heads, scrapers, an unfinished celt or knife, and many potsherds.

The finds are made within an area of 100 square yards.

The ground is scattered over with flakes and spalls of flint, smooth pebbles brought from some stream, and pottery which has been broken in the cultivation of the soil.

The arrow-heads are made of yellow and blue flint—the yellow ones are quite crude, while the blue points are well shaped, small, thin, and of excellent workmanship.

The pottery has the markings of being formed in bark or cordage, while some is smooth; rim pieces are tooled. In color they are light gray to nearly black. Very fine gravel was used to temper with. Most sherds are too small to give much idea of form, but some rim pieces show them to have been quite graceful vessels. I have been informed that the pottery was made in the immediate vicinity.

Numerous burnt rock and pebbles are found near the site to the south.

The flint from which the implements are made was transported here, as there is none in this locality.

Mr. Ritterbush showed me a number of large yellow flint implements (between 6 and 10 in. long and from 2 to 3 in. wide) and some pottery (very nearly entire) that was plowed up in his father's field one mile south of Nelson. The workmanship is similar to that found in the aforementioned site.

Have heard of no pipes, ceremonials, pestles, mortars etc., being found in the vicinity.

The only axe seen is one owned by Bert Stoner, of Nelson. It was found near the town several years ago by him. It is made of green stone and measures 5½ in. long, 2¾ wide and 2¼ thick, tapering to an edge; weighs two pounds and two ounces. The workmanship is crude, and the groove, in some places, not well defined.

HOUSES AND IMPLEMENTS OF THE LUISENOS

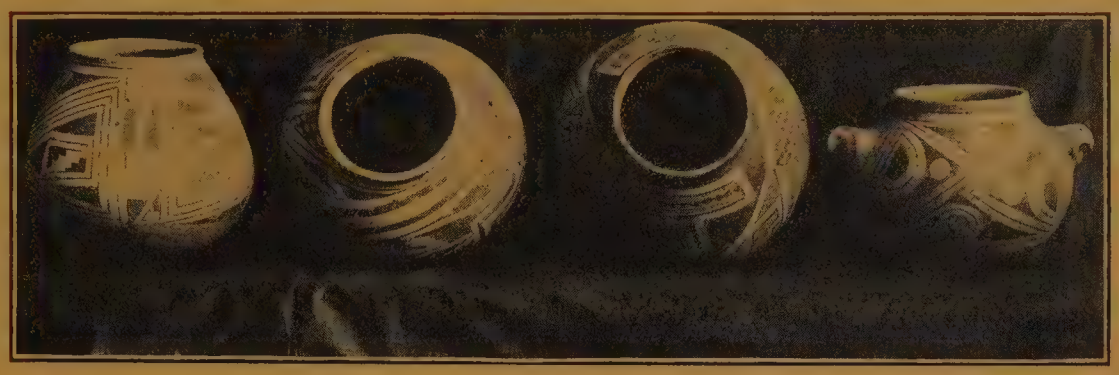
The house consisted of a framework of posts, rafters, and poles, with a thatching of shuikawat plants. The thatching was then thickly covered with soil. The interior of the house was excavated perhaps 2 ft. Tule houses were built by the mountain Luiseño while at San Luis Rey mission.

The sweat-house was similar but smaller. Two forked posts were erected and connected by a log, on which poles were rested from both sides. A thatching of plants was covered with mud, and over this was put dry soil. The door was on one of the long sides. The sweat-house was not used for dancing, all such functions occurring in the wamgush enclosure. The sweat-house was regularly used for sweating in the evening, and sometimes in the morning also. After sweating in the evening, men slept in the house, not in the sweat-house. The heat in the sweat-house was produced directly by fire, not by steam.

The mortars of the Luiseño are generally large boulders weighing perhaps 200 pounds or more. The cavity is conical and pointed rather than rounded. The pestles are usually a foot or more long and rather unshaped. One or two sides are generally flat, as in Yokuts pestles, and the butt end, which is wider than it is thick, has a diameter of about half the length of the pestle. On the whole the pestles seem to be boulders or slabs which are little worked except at the rather pointed pounding end. The most common material is granite. A flat metate, malal, was also used.

Nothing corresponding to a drum is said to have been used in any ceremonies. Whistles, bakhal, of cane or reed, huikish, and asphalt, shanat, were used at the boys' initiation, at the time when the boys were buried and covered with ants. The pumalum or initiated men danced in a circle on this occasion, blowing these whistles and singing in slow broken syllables. The chief musical instrument in ceremonies was the rattle. This was made of a turtle-shell, paayat, which often contained cherry-seeds. String was wound around the shell until the head and leg openings were covered. A stick was put through the top and bottom of the shell until it projected a few inches above and about a foot below. Such rattles were used in the singing in the mourning ceremonies. They were also used for the dancing in connection with the girls puberty ceremony. At this ceremony women danced, while men, bending their bodies forward, sang and rattled, stamping one foot.

Money, auvirat or khenkhat, was made from shells called si'wal, probably a clam; khapshut, almeja; and shauvish, a large univalve of which the columella was used. The clam shells were made into small disks which were perforated and strung. The strings were measured around the circumference of the hand, much as by the Yokuts, except that the measurement seems to have been a little scantier. The end of the string was held between the tips of two fingers. The string was then passed entirely around the edge of the hand back to its beginning, and continued a second time down one side of the hand to the wrist. This measure, approximately one and a half times the circuit of the hand and fingers, was half the unit measure, which was called ponko. This full measure was also determined by taking the end of the string between two finger tips, and then passing around the elbow and back to the finger tips. [From A. L. Kroeber in *University of California Publications in American Archaeology and Ethnology,* Vol. 8, No. 3.]



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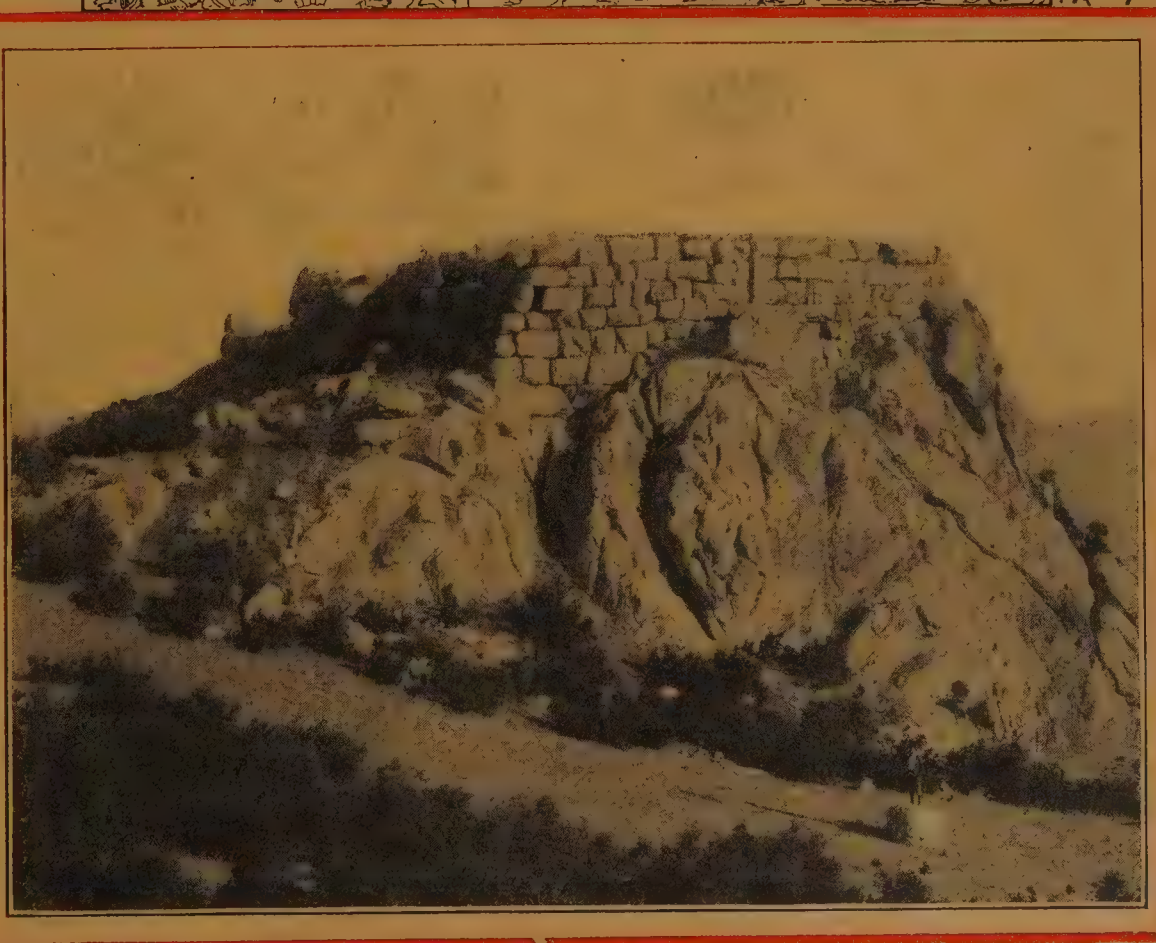

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RECORDS OF THE PAST

Part VI

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HITTITE PROCESSION AT YASILI-KAYA, NEAR BOGHAZ-KEUY, ASIA MINOR

RECORDS OF THE PAST

VOL. VII

PART VI

BI-MONTHLY

NOVEMBER-DECEMBER, 1908

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HITTITES NEAR MARSOVAN, ASIA MINOR

SINCE it has been shown that Hittites occupied a number of important centers in Asia Minor about 1000 to 1500 B. C., it has become probable that much or most of the intervening territory was the abode of the same race. A vast city like Boghaz-keuy, with its massive ramparts and castles, its spacious palace and other buildings, its library with thousands of cuneiform tablets, its solemn sanctuary at Yasili Kaya a mile or two away, its kings able to make war and peace on terms of equality with the Pharaohs of Egypt, would certainly require extensive provinces to support it, and would naturally extend its sway to cover much of, perhaps the whole of, Asia Minor and Northern Syria.

The ruins of Boghaz-keuy lie about 75 miles southwest of Marsovan, where these lines are written, and 75 miles northeast of this place is Terme, the name of which is apparently derived from the Thermodon of Strabo, at the mouth of which river he locates "the plain of the Amazons." Professor Sayce in his work on *The Hittites* holds that the Amazons were the armed Hittite priestesses of a goddess, whose cult spread westward through Asia Minor from Carchemish. I had occasion to pass through the Terme region not long ago, and was greatly interested to find that the mountains rising back of Terme,—the Black Sea rolls before it,—are still called the Amazon Mountains, and the people not only know the old tradition that a tribe of warrior women once lived there, but say that the women of that mountain range

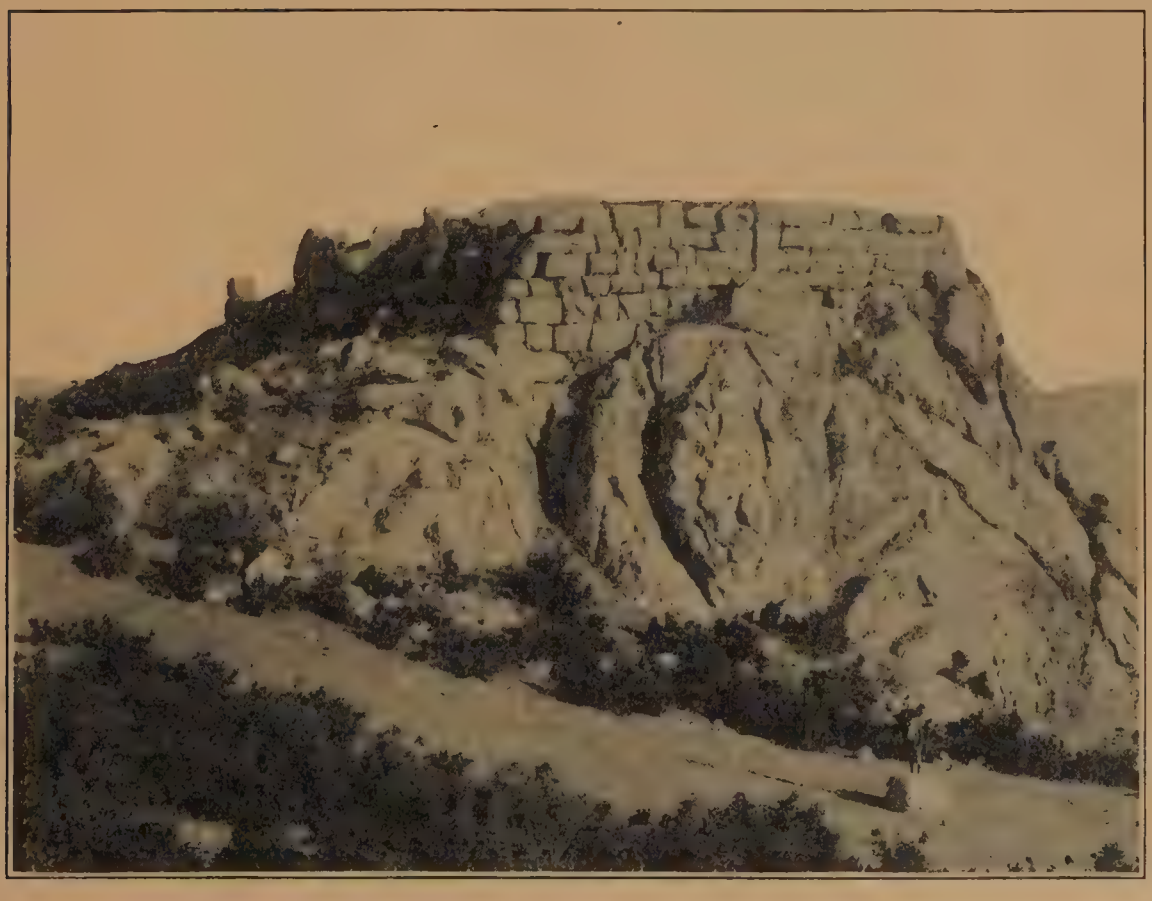
ARTIFICIAL MOUND, MARSOVAN PLAIN, NEAR AN ARMENIAN MONASTERY

now are stronger than the men, live longer, work harder and are more quarrelsome (!). RECORDS OF THE PAST in its issue for April, 1907, described a Primitive Cattle Shrine at Chirishli Tepe, a hilltop just about half way from this place to the Amazon country, and Professor Sayce on reading that article expressed his opinion that Chirishli Tepe would be a Hittite shrine. All the probabilities seem to me to confirm that view. It is remarkable that all the terra cotta figurines found there, representing the human form, are heads of women, not of men.

A hundred miles southeast of us are the ruins of Comana, a populous mart, according to Strabo, the residence of a multitude of women dedicated to the service of the goddess, and frequented by Armenians. There seems to have been some connection between the Armenians and the Hittites, but Strabo does not mention the latter. The name and memory of the Hittites had faded from the minds of men during the ten confused centuries preceding the Christian era. Fifty miles south of Marsovan is Zile, the most striking feature of which is a huge mound or hill in the center of the city. Strabo says Zile was built upon the mound of Semiramis, that it was a sacred city with a temple to which the revenues of the region round about were dedicated, that it contained a multitude of sacred menials, that sacrifices were performed with more pomp and oaths taken with more solemnity than in other places, and that its worship also was kindred to that of the Armenians.

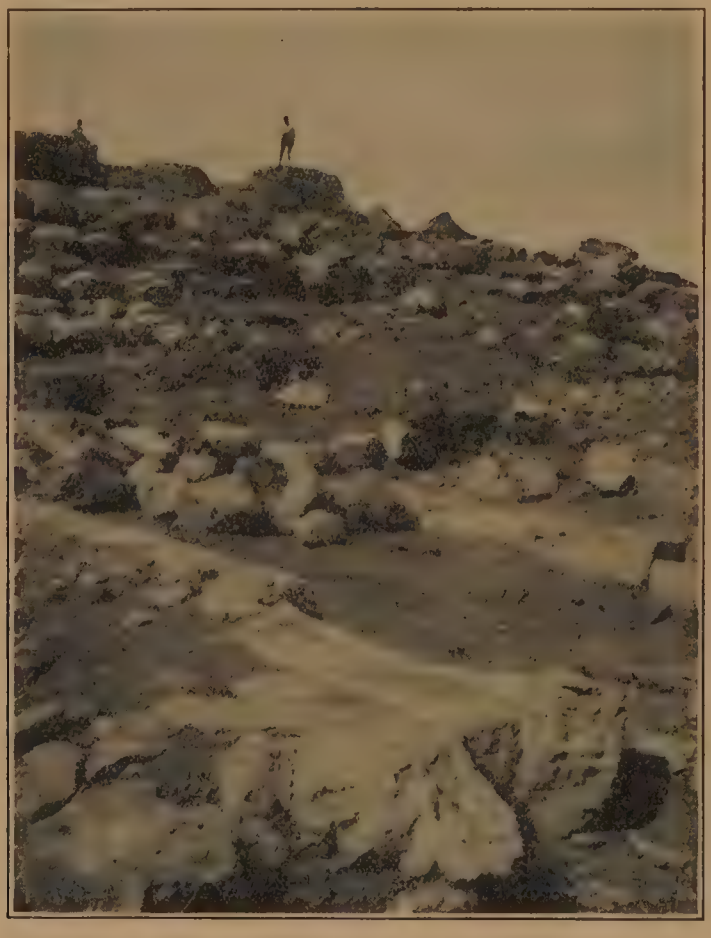
It was with a general knowledge of the facts and possibilities stated above that the writer went out one day late last summer to meet a party of friends returning from Boghaz-keuy, where the indefatigable Germans have been making such rich finds within the last three

CORNER OF GREAT PALACE, BOGHAZ-KEUY



"SARU KALE," YELLOW CASTLE, WITHIN THE WALL, BOGHAZ-KEUY

years. Having a little extra time I turned aside from the highway and strolled over one of the mounds, wholly or partly artificial, that adorn our plain, and selected a few from the hundreds of pottery fragments strewn over the surface. The finest specimen was a bit striped with lines and decorated with semi-loops of dark red paint. When I met the friends coming back from the Boghaz-keuy visit, imagine my delight on receiving from my son another pottery fragment of exactly the same type. He exhibited with boyish glee a double handful of cuneiform fragments he had picked up, but let that pass now. The two pieces of pottery in material, workmanship, design, coloring, everything, represent just the same artistic style. If these two mute bits of



PALACE WALL, BOGHAZ-KEUY

brick do not testify eloquently to one class of manufacturers, there is no value in the evidence of fictile art. Now, then, the piece from Boghaz-keuy is undoubtedly Hittite. The name or title of the king as given in tablets read by Professor Winckler was Kheta-sar; the date was contemporary with that of Rameses II of Egypt; the style of art was quite uniform throughout. From this it follows that the other pottery fragment must also be of Hittite origin, and *the artificial mounds of this region are the work of Hittites.*

There are perhaps a dozen of these mounds in this immediate vicinity. They vary in height from next to nothing above the plain

to an altitude of 40 or 50 ft. They usually stand isolated, and cannot possibly be taken as due to natural formation. Their circumference is great in proportion to their height, and shows that the mounds have been worn down by the frosts of many winters and the rains of many summers. These mounds await exploration within, but their surface is always covered with pottery fragments of several well-marked types. The work of the potter is abundant in Turkey, but he does not at present turn out the sorts with which the mounds are littered. Much of the old work is wheel-made; some is not. Some bricks, with or without flanged edges, are heavy, coarse and crude, such as would be suitable for walls and floors; some were parts of cups or vases, bowls or

SCULPTURE AT ONE OF THE GATEWAYS, BOGHAZ-KEUY

bottles, plates or dishes, as delicate as could be desired; parts of jars for storing grain or wine are not uncommon. The clays employed usually yielded a reddish color as the result of firing, but some are quite dark, others yellowish or slate colored. Many are decorated with lines of well-marked dark paint, or have more intricate devices upon them. Occasionally a white or yellow tinted paint was used, and many pieces are wholly of a jet black color. Near one of these mounds an Armenian monastery is located. It is not unlikely that the Christian foundation was due to the sanctity with which the spot had been regarded for long centuries before the Christian era.

ARTIFICIAL MOUND, MARSOVAN PLAIN

The peasantry of the country commonly call these mounds "Treasure Hills," and believe that fabulous wealth is stored up in them. A common tradition is that a golden plow and ox-yoke are there. Some suppose that there are doors and rooms, vaults and windows inside. But "jinns" are believed to guard such spots, and the common people fear to explore them, even for the prosaic purpose of digging out a few jars and vases, lest some "stroke" overtake them. The stories of buried treasure are the natural result of actual discoveries in some cases. There are buried treasures in the country, as witness the excavations at Ephesus and Troy.

Another site not far away is not a mound but a buried city, now covered to the depth of 6 ft. with solid earth washed down from a ridge of hills a mile away. The site is on a river bluff, and the stream below, which has perhaps changed its course since the day when a city flourished here, has washed away the foot of the perpendicular bluff, bringing to light part of what lay buried in the bank. The worst rascal of the neighborhood tells me that there are 7 kettles of gold buried there, enough to provide for the expenses of the Ottoman Empire 7 years without other revenue. But in order to find it, one must first take to wife a woman, live with her for a time, then take her life, and afterwards seek the gold. That is, human blood must be shed as a sacrifice at the inception of the attempt. All sorts of pottery, however, are exhumed in abundance, and one of the painted fragments being submitted to Professor Sayce, he pronounced it "Mycenean." But what can "Mycenean" mean as used of Asia Minor but Hittite?

When I compared these pottery fragments from Boghaz-keuy and the Marsovan plain with others in my collection, another interesting fact emerged. Two other pieces, one from Zile and one from a rock-hewn tomb at Gerdek-kaya, belong to just the same style of

art. It is easy to believe that Zile with its great antiquity and sacred character was once a Hittite city. Remember, Strabo says it was built on the mound of Semiramis; he says the same thing for Tyana, the modern Bor, and important Hittite discoveries have been made at Bor. The huge mound at Zile, the walled summit of which is now occupied by a Turkish garrison, and on one side of which are the remains of a well-wrought Greek theater, is littered over with enormous numbers of pottery pieces, many of them very beautifully decorated. It is at least possible that stores of cuneiform tablets and perhaps stones with characteristic Hittite sculptures will be unearthed within this mound.

RUINS OF A CITY ON RIVER BLUFF, MARSOVAN PLAIN. "MYCENEAN" POTTERY FOUND 6 FT. BELOW THE TOP LEVEL

Our chief positive evidence for the Hittite occupation of Zile rests on this tiny bit of painted pottery.

Gerdek-kaya, one hour north of Alaja, consists of a large porch, hewn out of living rock, with 3 massive pillars left in position in front, a rock-hewn stairway for the approach, and a room or burial chamber at each end of the porch. Near by are the remains of another tomb, much defaced by the lapse of time, a stair-case cut inside the rock and terminating at the water of a little river below, with some other archæological remains. Once more, if the tell-tale pottery tells its tale truly, this also was a Hittite site. Then, further, the better known rock-hewn

TUNNEL, 200 PACES LONG, UNDER THE WALL, BOGHAZ-KEUY

tombs at Amasia* by a natural inference should be referred to Hittite builders also. These tombs are referred to, supposably, by Strabo under the name "monuments of the kings." There is a Greek inscription across the front of the "Mirror Tomb," but that may have been added long after the original construction of that wonderful temple-like tomb, just as paintings representing Christian art found in more than one of the Amasia tombs of course were an addition later than the time of Strabo.

If, then, our argument is correct, the Hittite civilization that undoubtedly existed at certain points in Asia Minor in the second millennium before the Christian era naturally covered much of the intervening territory; Hittites occupied the historic cities such as Zile; their hands reared the artificial mounds of the Anatolian plains; they carved out the rock-hewn tombs. It is a case where the presumption is clear and strong and a small amount of direct evidence,—as small as fragments of pottery,—is enough to establish the proof,—at least to the extent of establishing a working hypothesis.

GEORGE E. WHITE.

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*See RECORD OF THE PAST, Vol. II, pp. 130-140, and Vol. III, pp. 67-73.

SOLAR ECLIPSES AND ANCIENT HISTORY

THAT tradition is at the bottom of many of our so-called historical facts has been proven again and again. That tradition is not to be trusted entirely has also been repeatedly proven. This applies especially to dates. An impression was produced by facts undoubtedly, this impression has grown into history; but the time when such events occurred often becomes much misplaced, so that additional light may be received from most unexpected sources.

An instance of this kind has but recently come to light through the researches of Mr. Cowell, F.R.S., chief assistant of the Royal Observatory, Greenwich. A paper by Mr. Samuel Jennings, of Toronto, upon some of Mr. Cowell's studies appeared in the *Journal of the Royal Astronomical Society* for July and August, 1908, from which we adduce some figures, facts and suggestions, of great interest, tending to settle some long disputed historical statements.

The total eclipse of the sun is, naturally, a most impressive spectacle and one not readily forgotten by anyone who has witnessed it. But while the impression has come down through the ages in ancient writings it has often been difficult to fix the dates exactly. "More than two centuries ago, in 1693, Halley showed that the month was very slowly changing in length. The amount of this change was measured correctly by Prof. Simon Newcomb, the great American Astronomer, when in 1878 he discussed the times of nineteen eclipses of the moon, recorded by Claudius Ptolemy, as having taken place between B. C. 721, and A. D. 136. But it never occurred to Professor Newcomb to take into consideration the possibility that there might be a change in the length of the year, and when he turned his attention to the supposed records of ancient solar eclipses they did not accord with his calculations. He therefore rejected them as untrustworthy.

"Just here is where Mr. Cowell's researches are most interesting. He, during the years 1903 and 1904, took up the question of five ancient eclipses of the sun:

"Nineveh, 763 B. C.,

"Archilohus Thasos, 648 B. C.,

"Thucidides at Athens, 431 B. C.,

"Agathocles, near Syracuse, 310 B. C., and

"Turtullian at Utica, 177 A. D. and found them self-consistent.

"Another point in favor of their acceptance is that the rate of change in the length of the month deduced from these eclipses agrees with Newcomb's results derived in 1878 from the eclipses of the moon."

Another record, that of a sixth eclipse, the most ancient yet available to us, was made by Dr. L. W. King on one of the cuneiform tablets in the British Museum. It refers to an eclipse observed at Babylon B. C. 1063. The astronomical tables at present in use do not account for these six eclipses as they are recorded. The question therefore arises were the historians unaware of the limit of totality, or are the astronomical tables now used incorrect?

Very few people realize how rare a total eclipse is at any particular spot. "On an average such an event only occurs once in 300 years for any given place. The last total eclipse visible in England was in 1724, the next to be seen in this country will be that of 1927, an interval of more than 200 years, not for a single city, but for the country as a whole. The last visible in London was that of 1715. The next previous one visible in London was that of 873. It does not appear that another will be visible here for at least some 600 years to come."

"Later on Mr. Cowell examined three mediæval eclipses, those of A. D. 1030, 1239, and 1241, besides two further ancient eclipses which he had previously left on one side." Both these and the three mediæval eclipses fitted in completely with his computations. A total eclipse of the sun is only over a very narrow belt of the earth's surface, while an eclipse of the moon may extend over the whole magnitude of earth turned toward it at the time.

Mr. Cowell has also studied and discussed the 19 lunar eclipses and found that they were in accord with this hypothesis of a very minute change in the relative lengths of the day and year.

"The astronomical evidence, therefore, in support of this hypothesis rests upon 7 solar eclipses before the Christian era, 4 solar eclipses since, together with the general testimony of 19 lunar eclipses. But the last two solar eclipses named are of especial interest from more than one point of view. They are those which are commonly known as 'The eclipse of Larissa' and 'The eclipse of Thales.' " These eclipses have been much discussed, and have been wrongly identified, so that the historical writers have been misled, making much confusion in the history of that period. Our historical knowledge of the first of these eclipses, that of Larissa, is derived from Xenophon, who in his account of the Retreat of the Ten Thousand says: "After this defeat the Persians retired and the Greeks, marching the rest of the day without disturbance, came to the river Tigris, where stood a large uninhabited city called Larissa, anciently inhabited by the Medes, the walls of which were 25 ft. in breadth, 100 ft. in height, and 2 parasangs in circuit, all built of brick except the plinth, which was of stone 20 ft. high. This city, when besieged by the king of Persia at the time the Persians were wresting the empire from the Medes, he could not make himself master of by any means, when it happened that the sun, obscured by a cloud, disappeared, and the darkness continued till the inhabitants being seized with consternation, the town was taken" (*Anabasis,* B. III, chap. iv).

Larissa has been identified as Calah, 18 miles from Nineveh. The astronomer, Sir G. B. Airy, identified the eclipse of Larissa with that of May 19, 557 B. C., and showed that according to Hansen's table of the moon the narrow zone of totality passed nearly centrally over Larissa. But later knowledge has proved these calculations wrong, and the zone must have lain hundreds of miles south of Larissa. With the table of the moon as corrected by Mr. Cowell, one eclipse, and only one, becomes total at Calah, that of B. C. 603, May 18, and this date fits in with the chronology of the fall of Nineveh. The great siege began B. C. 609 and the city fell three years later. In 605 B. C., the Chaldeans defeated the Egyptians at Charchemish, then, as Mr. Cowell points out, the Chaldeans are not heard of for three years, and in B. C. 601 or 600 they invaded Judea. "The capture of Larissa exactly fits into this gap of three years in the current Assyriological knowledge."

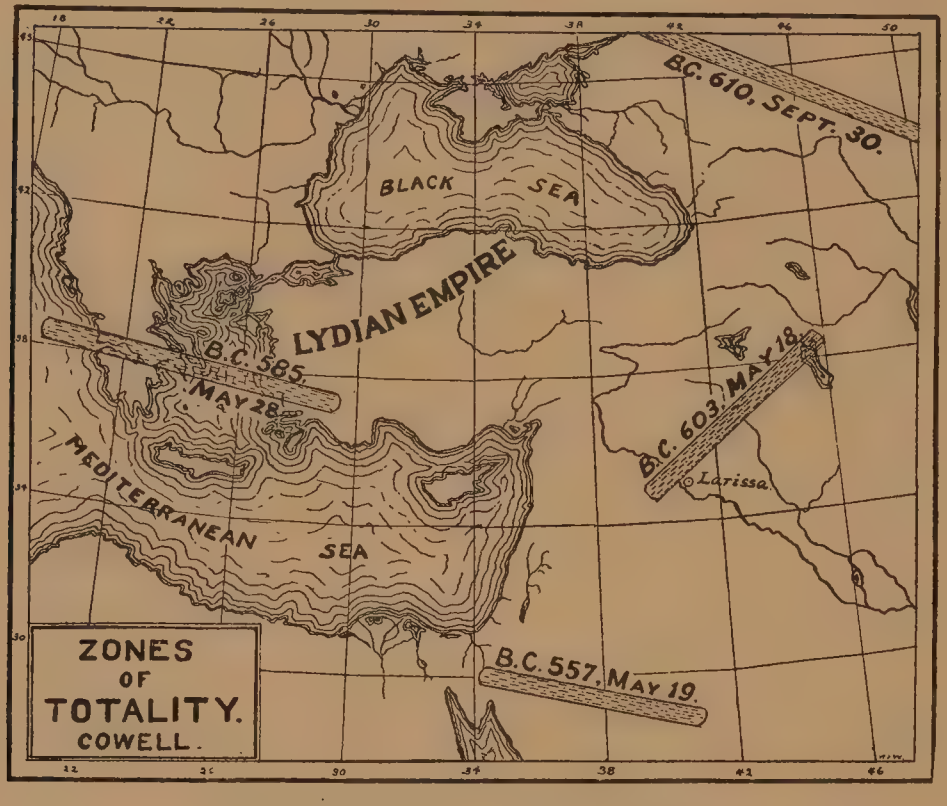
Mr. Nevill, director of the Natal Observatory, has pointed out the fact that the additions made to our knowledge of Assyrian history and chronology have fixed with certainty the dates of many facts hitherto uncertain, "and that Nineveh, Calah, and other great Assyrian cities disappeared from history before B. C. 600, and the state of their ruins at the present time shows that the destruction was sudden and once for all. Every inhabitant perished or was transported into slavery. The capture of Larissa must have been that of the Assyrian Calah by the Medes and Babylonians prior to B. C. 600."

Of course Xenophon's great cloud may not refer to a total eclipse of the sun at all, but when we consider how deep an impression such an event must have produced, especially upon the Assyrians to whom the sun represented a ruling deity, Asshur, there can be no real doubt of the identification.

Again, referring to the quotation from Xenophon, the author has evidently thought that the eclipse of Larissa occurred when the Persians were wresting the empire from the Medes, "and the date usually assigned to this revolt is about B. C. 559. Astronomy tells us that a total eclipse of the sun did take place on May 19, B. C. 557, and that it was visible as a very large partial eclipse in this region." We must suppose, therefore, that Xenophon, who had only tradition to go upon, confounded the two, that of 557 and 603, as one and the same.

Herodotus was misled in this way as to the date of the eclipse of Thales, which took place on May 28, 585 B. C., when after describing the progress of the war between the Lydians and the Medes, he says that in the sixth year during an engagement "it happened that in the heat of battle, day was suddenly turned into night. This change of the day Thales the Milesian had foretold to the Ionians. The Lydians and Medes seeing night succeeding in the place of day desisted from fighting and both showed a great anxiety to make peace." (*Her.*, B. i. cap. lxxiv.) He goes on to say that the battle was finally decided by arbitration. "Syennesis the Cilician and Labynetus (Nebuchadnezzar the Babylonian) were the mediators

of their reconciliation. These were they who hastened the treaty between them and made a matrimonial connection, for they persuaded Alyattes to give his daughter, Aryennis in marriage to Astyages, son of Cyaxares." Herodotus evidently held the opinion that the fall of Nineveh took place after the war with Lydia.



PATHS OF ANCIENT ECLIPSES

"Modern chronologists have held these same views. Woodward and Cates, Fisher, Baxter, the Students' Bible, and others, adopt the year B. C. 610 as that in which the Lydian war ended, while Hales, Clinton Blair (last edition, 1904) give us the latter eclipse, B. C. 603. Herodotus certainly fixed upon one or the other of these dates as the eclipse of Thales. If he adopted the earlier, that of 610, he was 25 years out of his reckoning, and if that of 603 he was 18 years wrong. * * * He built up his history on these suppositions and he found it necessary to account for 25 imaginary years between the accession of Astyages and the fall of Babylon in B. C. 536. Therefore, he represented Astyages as a much older man than he really was," which has made much confusion in trying to adjust the facts.

"The eclipse of May 28, B. C. 585, passed through Asia Minor, and the Sunset, according to Mr. Cowell's computations, totally eclipsed about east longitude 29." This agrees with Herodotus when he speaks of the battle being a kind of "nocturnal engagement" and that the day was suddenly turned into night. "It must, however, be clearly borne in mind that there is no uncertainty as to the dates at which total eclipses of the sun have occurred, nor even any doubt

as to the general regions of the earth crossed by the shadow. The only uncertainty has been as to the exact position of the zones of totality." There have been only 4 eclipses which could possibly have taken place during the historical period spoken of by Herodotus and Xenophon, and visible in the countries mentioned by them: namely, September 30, B. C. 610; May 18, 603; May 28, 585; May 19, 557.

Mr. Cowell's calculations place the eclipse of 603 B. C. as total at Larissa, and the same computations agree with what we know of the eclipse of Thales. It could not be that of 610 B. C., because the path of the shadow lay too far to the north, and from historical evidence we know it must have occurred after the destruction of the Assyrian empire.

"Herodotus was evidently unacquainted with the ancient observations by Chaldeans who had discovered that solar eclipses recurred after intervals of 18 solar years. This period they called Saros." "Some few Greek and modern writers have in this way determined the date of the eclipse of Thales, but most have followed Herodotus."

Having accepted these facts as marking the date and marriage of Astyages, it pushes aside all difficulty in identifying Astyages with Darius the Mede, who as Daniel tells us received the kingdom of the Chaldeans "being about three score and two years old" (*Daniel*, v: 31). "Niehbuhr, Westcott, and Vaux held this opinion, but admit a difficulty owing to the prevailing belief that Astyages must have been a much older man, even if he had been alive when Babylon fell in B. C. 536." This, then, would place Astyages' birth year in 599 or 598 B. C. and he would have been about 14 years of age at the time of his accession and marriage—not too early to suit Eastern ideas.

Another supposition is shown to be untenable by this: namely, that Astyages had a marriageable daughter Mandane, who was said to be the mother of Cyrus. This could not have been, because Cyrus was born when Astyages was 23 years old.

So three questions seem to be settled by the astronomical calculations. 1st, that Astyages was a young man at his accession. 2d. that Cyrus was not his grandson. 3d, that the question of his age need no longer be considered an insurmountable obstacle towards identifying him with Darius the Mede. There are references to another Darius who reigned in Persia before Darius Hystaspes, and with these new facts in mind it becomes very probable that Astyages was the monarch referred to instead of Darius Hystaspes.

"In *Daniel*, ix: 1, the father of Darius the Mede is stated to have been Ahasuerus. According to Scaliger and others the name Cyaxares and Ahasuerus are identical, the one being the grecised form of the other, and no one disputes that Astyages was the son of Cyaxares I, the Medo-Persian king, who in alliance with the Chaldeans destroyed the Assyrian empire in B. C. 606, which event is alluded to in *Tobit*, xiv: 15, 'but before he (Tobias) died he heard of the destruction of Nineveh which was taken by Nebuchadrezzar and Assuerus.' Josephus also says that Darius was known to the Greeks by another name."

Sir Fenwick Williams, of Kars, in 1850 found upon the base of one of the great pillars at Susa (Shushan) a statement of Artaxerxes (Memnon) tracing his descent through Xerxes to Darius Hystaspes. It concludes thus: "Darius my ancestor anciently built this temple and afterwards it was repaired by Artaxerxes my grandfather." This word *anciently* would appear to denote a Darius before the time of Hystaspes.

Xenophon makes mention of a king of Medo-Persia whom he calls Cyaxares II, son and successor to Astyages, but Herodotus disagrees with him, for he states definitely that Astyages was the last king of Media and says that he was succeeded by Cyrus. In the Apochryphal fragment entitled *Bel and the Dragon* this statement is confirmed when it says: "And king Astyages was gathered to his fathers, and Cyrus of Persia received his kingdom and Daniel conversed with the king, and was honored before all his friends." This agrees with *Daniel* vi: 1-3, where Astyages is called Darius, and it is very evidently after the fall of Babylon (about B. C. 534). We also know that this same Darius was ruler over Ecbatana very shortly before.

Astyages and Cyrus were joint kings, their reign over the Babylonian Empire beginning the same year, the "1st year of Cyrus (Ezra I) was also the first year of Darius (the Mede) (*Daniel* ix: 1). Astyages then died and Cyrus reigned alone."

Might this not explain why, when Darius Hystaspes searched for the decree of Cyrus, it could not be found in Babylon, but was discovered in Ecbatana, in Media?

Now we come to some surprising results in the book of Esther. When we remember that king Ahasuerus and Astyages are the same person, a mystery which has seemed impenetrable is cleared up. Astyages married the daughter of the king of Lydia in B. C. 585, three years after he disgraced and divorced this queen and thus brought upon himself the wrath of the king of Lydia. Four years later, B. C. 578 or 577, Ahasuerus raised the Jewess Esther in Vashti's place; and 5 years later the plot to destroy the Jews took place, presumably with the connivance of the king of Lydia. Esther became queen in 577 B. C. Cyrus was born in the palace of Astyages in 576, the year following the marriage. There is no direct statement to the effect that Cyrus was the son of Esther and king Astyages, but the inference seems quite natural. Mandane who is said to have been the daughter of Astyages could not have been the mother of Cyrus, but she might possibly have been his half sister, and was married to Cambyses the Persian.

That there was a plot to destroy Cyrus seems certain. He was saved by Harpagus who carried the child to Mandane in Persia, and Cyrus became her adopted son. This makes Xenophon's story sound reasonable and also accounts for the anxiety of Astyages lest some harm should befall Cyrus, who was in his twelfth year when he

returned. The king took pains to immediately create Cyrus associate king with himself, and that caused the open revolt of the Medes against Cyrus who was in command of the Persian army. Astyages appointed Harpagus to command the Median troops, because presumably he knew him to be friendly to Cyrus. Herodotus is astonished at such a move on Astyages' part.

Astyages reigned at home, and having supported Cyrus, no doubt delighted at his success, seeing that he had made one conquest after another until the Medo-Persian empire under the administration of Astyages comprised 127 provinces. Astyages died B. C. 535 or 534 and Cyrus then became king.

Thus, as we said in the beginning, the tradition has a certain amount of truth at bottom, but when it has filtered down through centuries it has gained some accretions and lost some facts which account for the discrepancies in the works of Herodotus, Xenophon, and others. But the fogs having been cleared away which surround the eclipse of Thales by these calculations of Mr. Cowell, we can reckon positively on certain statements in the book of Esther which have seemed heretofore irreconcilable. These in turn will help us to fix certain other disputed dates.

So it is that historians and Bible students, as well as scientists, owe a debt of gratitude to Mr. Cowell for his prolonged and arduous labors.

GEORGE FREDERICK WRIGHT.

Oberlin, Ohio.

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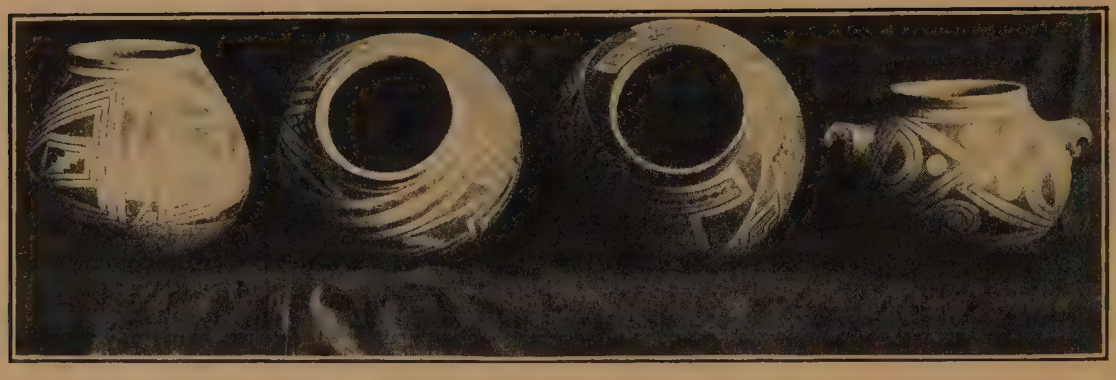

CASAS GRANDIAN POTTERY IN BLACKISTON COLLECTION, NATIONAL MUSEUM

RUINS OF THE TENAJA AND THE RIO SAN PEDRO

EVEN at the present day the extent and boundaries of the civilization of the inhabitants of the Casas Grandes of northern Mexico has not been fully determined. That the valley of that name with its great group of ruins and the numerous smaller ones was the political and cultural center there seems little doubt, and that though scattered in isolated groups, this civilization extended as far north at least as the American line there is equal certainty. To the east and the south its bounds are indefinite. The writer has examined ruins of these people fully 100 miles east of the Casas Grandes valley and has there obtained some excellent specimens of the noted yellow ware which has made this region famous; while to the south remains have been traced and the same pottery obtained as far as El Valle in the San Buenaventura valley.

To the west the low-lying mounds are strewn for many miles through the Sierras, the great difficulty being in determining where the remains of these people cease, and those of ruder and probably hostile though kindred tribes begin; for though there is a strong similarity in the culture symbols throughout this entire section, most of the passes are well fortified only a comparatively short distance from the central ruins, and invariably the strongest military works point but in one direction—toward the west.* The other frontiers were left to guard themselves either because an attack was not expected in those directions or because greater trust was placed in the vast stretches of semi-arid country which envelop them.

It is thus that the ruins on the Tenaja and the Rio San Pedro are of peculiar interest and present a special significance. The Tenaja, as its name signifies, is a river or wash consisting largely of pools,

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*See *Casas Grandian Outposts* by writer—RECORDS OF THE PAST—vol. V, pp. 142-147. The writer desires to acknowledge his indebtedness to the able assistance on the last expedition of Mr. J. Reynolds Coleman of El Paso, Texas, whose ardor for archæological research nearly terminated in his death at the hands of an assassin in this instance.

except during the rainy season when it aspires to the dignity of a flowing stream. It lies directly west of the Casas Grandes valley and is about 20 miles long, rising in the Sierras and emptying into the Piedras Verdes.

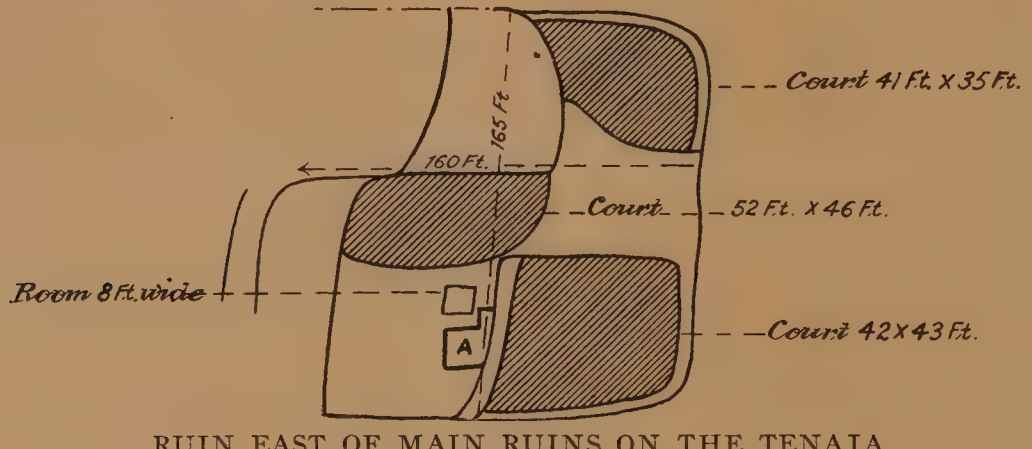
MAP OF THE RUINS ON THE TENAJA AND RIO SAN PEDRO SHOWING THEIR POSITION IN REGARD TO OTHER RUINS

Though a very insignificant river, it is the site of a group of ruins hardly second to the great ones of the Casas Grandes, and in ancient times was probably the scene of many military exploits, as its valley forms a great highway between the western valleys and the center of the prehistoric civilization. That the Casas Grandians were cognizant of the strategic possibilities of this is evident at a glance, for the remains of great stone and earthen fortifications that stretch across the narrow pass are easily recognised even at the present day as being among the most extensive and elaborate ever constructed by these people. The hand of Time working with erosion as its tool has nearly

leveled these remains with the earth, yet their lines can still be distinctly traced.

The distance of the upper or westernmost of these ruins from the Casas Grandes is from 18 to 25 miles, and consists of two parallel lines of stone and earth 150 ft. apart extending across the valley. A short distance back of these are located two other parallel lines only 50 ft. apart. The two sets were probably inclosed on their north and south sides, but as these were the most subject to erosion they have been nearly obliterated as have other adjoining ruins that can only be dimly distinguished at intervals. A full mile further up the stream is a small group of outlying mounds. A few hundred feet to the rear of the lines of the fortifications on the bank of the stream lie the remains of 8 communal dwellings of small size.

Back of these and forming a distinct group nearly a quarter of a mile distant is all that is left of the main pueblo. The outworks guarding its approach from the west were about 500 ft. in extent, while to the east they are much less elaborate, and can be traced only 150 ft. from the buildings.



RUIN EAST OF MAIN RUINS ON THE TENAJA
A is a room 10 ft. 3 in. by 14 ft.

The great pueblo itself rises in 16 large mounds, and covered an area nearly 800 ft. long by 300 ft. wide. While almost rivalling the famous group of "Great Houses" to the east in extent, in early days this ruin proably did not present anything like as imposing an appearance, as its height could not have exceeded 3 or 4 stories at most. This accounts for the lighter walls, and poor state of preservation which characterizes it today, despite the fact that its position also entails a greater exposure to the elements. The similarity of the development of the pottery and other culture symbols precludes the supposition of a greater antiquity. A heavy battle-ax of rough finish, metates and a number of other specimens corresponding to similar ones of this district were found here.

About half a mile further down stream lies another large mound which is still about 15 ft. high and 160 ft. in diameter. One of the rooms is 14 ft. long by 10 ft. 3 in. wide, from one of the corners

SCENE ON THE TENAJA

REMAINS OF WALL, SAN PEDRO VALLEY

REMAINS OF FORTIFICATION ON THE TENAJA

ROOM IN RUIN ON THE TENAJA, SHOWING DOOR AND PASSAGEWAY (TO RIGHT)

of which runs a passageway 4 ft. wide. There were 3 coats of plaster on the outer walls, and one heavy coat half an inch thick. The holes which had contained the beams were 8 in. in diamter, 4 in. deep, and showed unmistakable signs of fire; charred lintels and beams were in evidence as usual. A grain-shaped door of the common type 3 ft. in height, 1 ft. 9 in. at the top and 1 ft. 5 in. at the greatest width was noted. It had been blocked up with adobe on which were parallel lines, as if made by means of a number of small sticks pressed against it when still wet.

About three quarters of a mile below this is still another series of ruins opposite a small lateral pass, while further toward the mouth of the Tenaja there are others, none of which, however, approached in size or importance the large group described.

Thus it will be seen that the remains on this stream are out of all proportion to the size of the water course or the amount of arable land adjacent to it. There is no doubt that the inhabitants of these

HOLES WORKED IN THE ROCKS NEAR THE SITE OF THE MINE, SAN PEDRO VALLEY

ruins were connected with and formed a part of the civilization of the Casas Grandes, and, that they met a similar fate to that of the main body, the plentiful signs of fire and other indications would seem to signify. A metate found in the first cluster of ruins back of the fortified lines was just begun and only partially shaped. As the stone was an exceptionally good one and contained no flaws, its abandonment after it had been finally found and carried with much trouble to the site of the ruins, and then shaped by laborious methods, is eloquent of the fact that its owners departed without much warning.

We now, however, come to what was probably a totally different state of affairs when we pass the great red cliffs and pine clad banks of the headwaters of the Tenaja, and, ascending the long slopes of the intervening mountain range, drop down its steep western face into the valley of the San Pedro.

Here all is changed. The country is no longer bare of trees—pines and junipers flourish in the bottoms and up the mountain sides, as well as in the innumerable small box canyons, carpeted with rich gramma grass, which branch off in every direction. The river itself is much more worthy of the name than the Tenaja, and flows with an even current the year around to Lake Guzman. Its course is slightly east of north. Here also arable land is plentiful in the vallies, and yet trincheras abound in the precipitous mountain draws, and strange to say, with perhaps one doubtful exception, the passes are no longer fortified.

It is not the writer's intention to describe all the ruins on the Rio San Pedro, but only to make a brief notice of those that lie upon its headwaters, and consequently are contrasted as nearly as possible to those on the Tenaja.

On a high bank overlooking the river and directly opposite the pass that leads from the ruins last described, lie the remains of a village

METATE AND MOUND, SAN PEDRO VALLEY

of 5 communal buildings, the mounds being comprised in an area 335 ft. long by 150 ft. wide. The largest is 350 ft. in circumference, and about 10 ft. high, containing a number of rooms, one of which is 10 ft. long and 8 ft. in width. The walls were well formed and covered with plaster which is now burnt in many places, while much charred wood and charcoal is in evidence. A very fine circular metate probably used for crushing paint was found in this room.

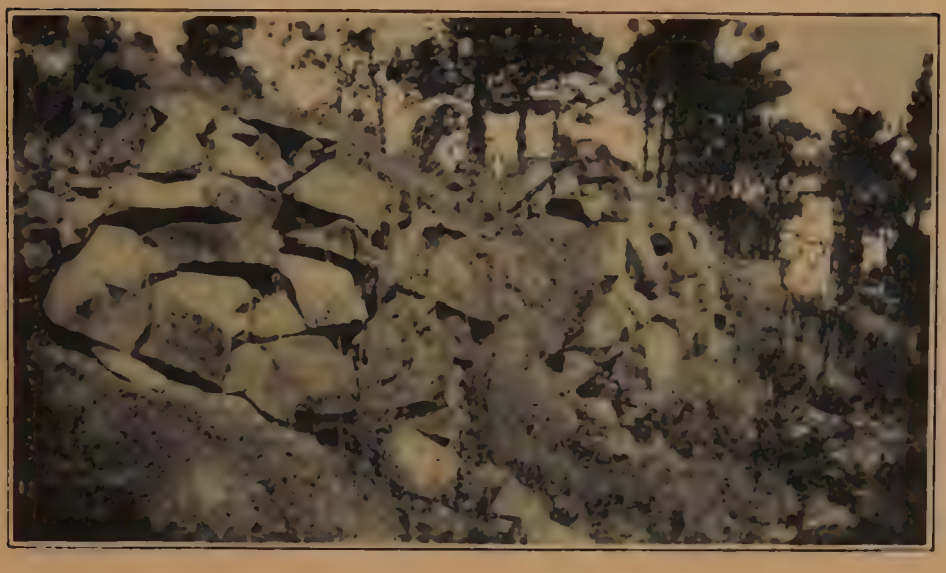
This house had originally been at least two stories in height and possibly three, with the greatest height in the middle, as is the case of the pueblo house pyramids of today. The pottery recovered was of the same type and finish as that of the Casas Grandes.

No signs of fortifications were noted, though the site was most favorable for them. Indeed with the possible exception alluded to, the writer was unable to find any structures of that nature in this section.

VILLAGE RUIN, SAN PEDRO VALLEY

UPPER ROCK WALL, SAN PEDRO VALLEY

About three quarters of a mile south of this is another ruin slightly further back upon the bench land, of small size, with a ring of stones 10 ft. in diameter, and a number of trincheras nearby. There is little more of note about this, though the next, about half a mile south and situated upon a hill further back from the river, has a distinct individuality owing to the number of holes 8 to 10 in. in diameter and about 4 in. deep that have been worked in the rocks immediately north of the remains, there being as many as 18 in one rock alone. A strong similarity in this particular is thus shown to some Arizona ruins. A stone wall 110 ft. long extends west of this. In the adjoining arroyo and along the north side of the plateau there is a series of trincheras.



MIDDLE ROCK WALL, SAN PEDRO VALLEY

LOWER ROCK WALL, SAN PEDRO VALLEY

The ruin itself measures 145 ft. long by 100 ft. wide, containing a number of rooms, one of which was 7 by 9 ft. A broken specimen of finely executed symbolic pottery was found here, and is illustrated below. It compares favorably with any made in this region.

Hardly 300 yards distant lies another village ruin comprising 6 large mounds in all, beautifully situated on a promontory overlooking the river. It seems to contain little of interest except a great trinchera 200 ft. long that stretches across a neighboring draw. The rock wall which was used as a facing is in a fairly good state of preservation and was solidly built.

But by far the most interesting legacy that prehistoric man has left us in this valley is the great series of rock walls one mile further

BROKEN POTTERY FROM RUIN ON RIO SAN PEDRO

up the stream. Here the encompassing mountains narrow to such an extent that there is hardly room for the river to pass between them, while their sides slope sharply downward. Far up the western declivity 3 sets of stone walls 5 ft. high stand boldly forth; they are between 150 and 200 ft. long, and from 20 to 30 ft. apart, the lower and second lines being by far the heaviest, while the upper one but a short distance from the summit is quite light. There are no ruins near these. That they were trincheras is of course possible, yet the fact that they are so near the summit and that the space between them consists almost wholly of large bald rocks would not greatly strengthen this theory. Their situation is more strategic than advantageous from an agricultural standpoint, yet despite the walls still standing the elements have played such a strong part here that it is almost impossible to learn anything of their former use.

From the condition of many of the mounds strewn through the valleys of northern Mexico it is evident that bitter warfare was carried on there in the past and that numbers of the dwellings were destroyed by fire. Indeed so apparent is this fact that the natives of the section, the whites as well as the Mexicans, believe that the so-called "Montezumas" were destroyed by fire due to a catyclism of nature in which thousands perished. The fortified passes as already noted demonstrate that an attack was expected from the west, and it is reasonable to presume that the ruins on the further side of these fortifications were inhabited by those tribes which carried death and annihilation to the high civilization which once flourished in the valley of the Casas Grandes, even as the same fate once visited the pueblo of Awatobi.

If such were the case, and every indication seems to point that way, the builders of the ruins of the San Pedro should probably be classed with the despoilers, and those of the fortifications of the Tenaja with the outposts of the vanquished.

A. H. Blackiston.

El Paso, Texas.

CHARLES ELIOT NORTON

THE death of Charles Eliot Norton on October 21, 1908, in his 81st year removes one of the most remarkable personalities that has graced and enriched the life of the past century. For an excellent portrait of his remarkable face the reader is referred to the January number of RECORDS OF THE PAST for 1905 [Vol. IV, p. 28]. He was born in Cambridge in 1827, in the house in which he died. He graduated from Harvard College in 1849 and had a short experience as a business man, going to India as supercargo, but found business foreign to his nature and soon after devoted himself to literary pursuits and teaching. President Eliot, his cousin, persuaded him in 1874 to take a chair which was created for him at Harvard, that of the History of Art; this he held until 1898, its course proving to be one of the most popular in the College, often having 400 or 500 students.

He was a close student of Dante, and in 1867 published his translation of Dante's *Vita Nuova*. He, together with a few other scholars, met for several years at Longfellow's Wednesday evenings and went over with the poet his translation of the *Divine Commedia*. In 1876 he published his *Church Building in the Middle Ages*. Before this he had been editor of the *North American Review* and had contributed an article to the first number of the *Atlantic Monthly*. He edited the correspondence of Carlyle and Emerson and after Froude's disastrous book appeared he was asked to edit Carlyle's Letters and Reminiscences, his exquisite taste making him an especially suitable person for such work. In 1893 he edited a two-volume edition of Lowell's Letters. In 1891 his prose translation of the *Divine Commedia* appeared. In 1904 appeared the *Letters of Ruskin*, whose acquaintance he had made years before on an excursion boat plying between Vevay and Geneva, and it is interesting to hear what Ruskin has to say of him. His idea was that Mr. Norton did not belong to America, he "being as hopelessly out of gear and place, over in the States there, as a runaway star dropped from Purgatory." Honors came to him. He received the degree Litt.D. from Cambridge in 1884, L.H.D. from Columbia in 1885, D.C.L. from Oxford in 1900, LL.D. from Yale in 1901. He was the first president of the Archæological Institute of America, and his interest in this Society was largely due to his contention that its work "would do much to resist the flood of vulgarity and barbaric luxury brought in by the rapid and enormous increase of wealth which is overwhelming the country." He was also president of the Dante Society, a member of the Massachusetts Historical Society, a member of the German Archæological Institute, and was an officer of the Order of

the Crown of Italy, this honor being conferred by the King as a recognition of his studies of Dante. He was also president of the Harvard Alumni Association.

In connection with all this literary work he never lost his interest in civic affairs, and at Ashfield, in 1898, made a memorable address which called out much comment. He felt with many others that the country had been dragged into an unrighteous war, and in a private letter to a friend several years before had said: "These dark days when the advocates of culture and the maintenance of morality in politics find their best type in Mrs. Partington," and in writing to Godkin he speaks of "the good old course of civilization which is always defeated, but always after defeat takes more advanced positions than ever before."

He was deeply touched by Higginson's poem written for the Phi Beta Kappa Society in 1904:

> "There's one I've watched from childhood free from guile
> His man's firm courage and his woman's smile,
> His portals open to the needy still,
> He spreads calm sunshine over Shady Hill."

Like Marcus Aurelius, who was his favorite religious companion, he had accustomed himself to the thought of change and was ready to welcome it when it came.

The lesson taught by his long, busy, useful life is one that the people in their mad rush for money and power may study with profit. That the things of the mind and spirit are worth the best effort, he proved, and the remembrance of that life may well be a beacon and guide to the young and ambitious.

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JOHN HENRY WRIGHT

JOHN HENRY WRIGHT, professor of Greek in Harvard University, died at his home in Cambridge of heart's disease on November 25. He had been editor of the *American Journal of Archaeology* for many years, in fact ever since its reorganization, until about a year ago. There are few classical archæologists in this country who do not owe to him their first interest in this subject, and much of whatever breadth of view they possess. Mr. Wright had a singularly firm grasp of knowledge, a keenness for essentials and the faculty of imparting something of his own scholarly point of view to his pupils and to all who through the *Journal* came in contact with him. As dean of the Graduate School of Harvard University for 13 years, he exerted a powerful influence on many of the rising genera-

tion of scholars, while it may be doubted whether there are any classical archæologists of note in this country who have not at some time or other profited by his instruction. He began teaching in 1878 first in Ohio State University, then in Dartmouth College and in Johns Hopkins University, whence he was called to Harvard in 1888 when he was 36 years of age. Born in Urumiah, Persia, where his father was an American missionary, on February 4, 1852, he was sent to America to be educated when he was 10 years old. He graduated from Dartmouth College in 1873 and later went to Leipsig to complete his education.

Mr. Wright was one of the most amiable and lovable of American scholars. His kindly sincerity won every heart. He was a keen critic, but his manner was so encouraging and his personality so big and wholesome that nobody ever went away from him downhearted. Withal there was that about the man which placed scholarship high, but humanity still higher. He was modest, learned, hard working, deeply religious and cheerful. His welcome to all, even the casual guest, was refreshing and hearty. Few men have been at the same time so universally respected and so universally beloved as John H. Wright.

EDMUND VON MACH.

Cambridge, Mass.

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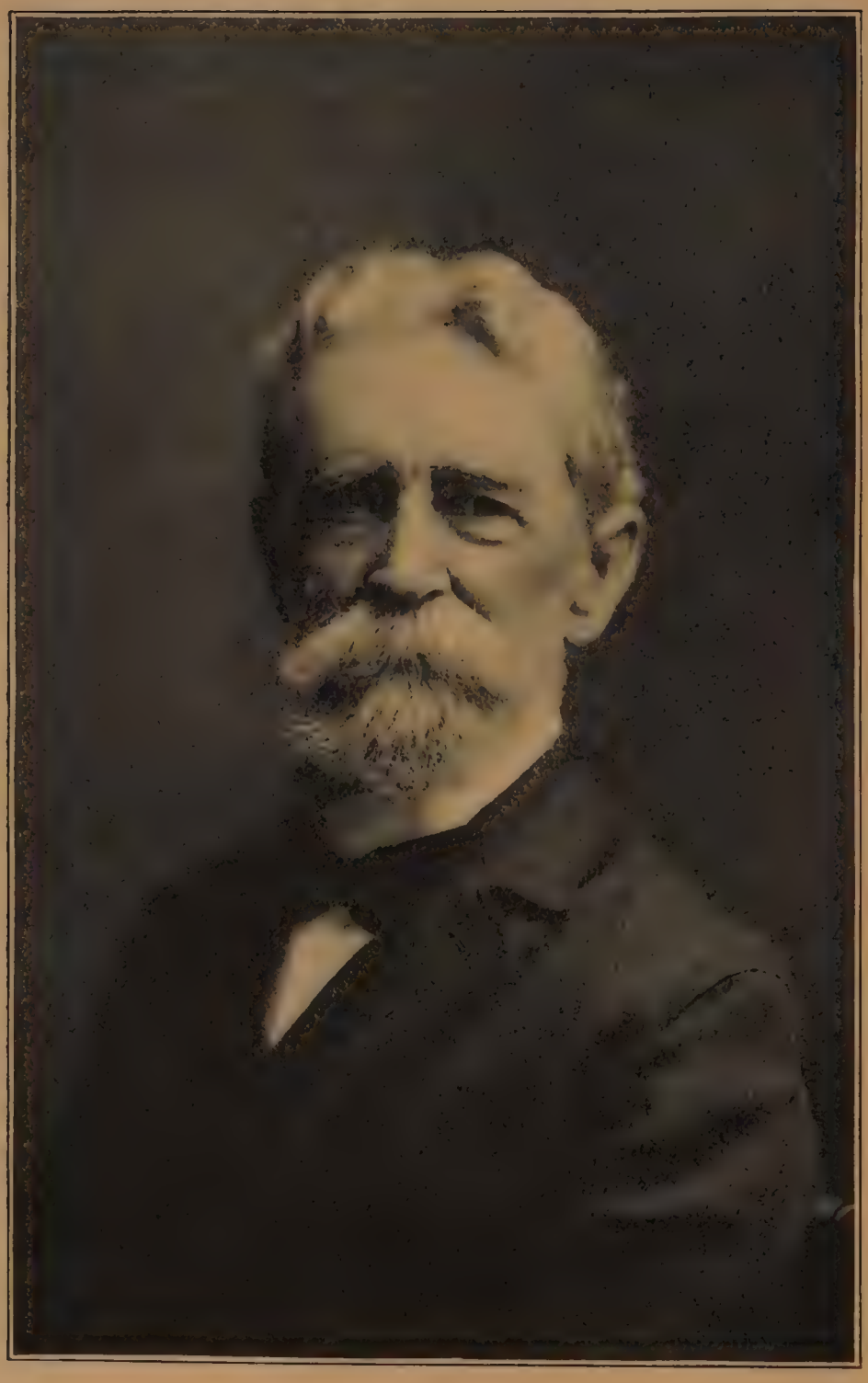
WORK OF THE COMMITTEE FOR EXCAVATION IN WALES AND THE MARCHES.—The Liverpool Committee for Excavation and Research in Wales and the Marches, instituted in October, 1907, to thoroughly investigate the early history of the Welsh people, has begun by conducting a preliminary survey of a few districts of Wales not previously investigated, and has made tentative excavations on sites to be more thoroughly examined soon. At Caerleon, Monmouthshire, excavations have been conducted "on a piece of land lately added to the churchyard. As 'quarrying' has been actively pursued on the site, a ground plan could only be recovered by following mere foundations at a depth of 4 or 5 ft. The area excavated, judging by analogy, was apparently the site of the 'principia.'

"Among the finds were a broken tablet bearing the inscription—

DEO MERCURIO
AVR DD SEVER P

an amphora handle with the graffito, in cursive letters, AMINE, and a few coins, chiefly of the Constantine family, but including one each of Carausius and Trajan. The value of the excavations consists in the recovery of the ground plan, especially as this is the first fragment of the interior arrangements of the camp which has been discovered."



OTIS TUFTON MASON

Photo by L. Bernie Gallaher

OTIS TUFTON MASON

EVERY one who has been even a casual visitor to the anthropological section of the National Museum, at Washington, will greatly miss the genial presence of Dr. Otis Tufton Mason who died on November 5, 1908. Although Doctor Mason suffered an attack of hemiplegia in 1898, he rallied from it, largely by will power, and resumed his duties at the Museum where he was to be found regularly until the 17th of last October, when he began to fail rapidly.

He was born of good American stock at Eastport, Me., on April 10, 1838. In 1861, he graduated from Columbian University in Washington, receiving the degree of master of arts. Later his *alma mater* bestowed on him the degrees of Doctor of Philosophy and Doctor of Laws. From 1862 until 1884 he was principal of the Columbian Preparatory School, a position which he gave up in 1884 so as to devote his whole time to work in the National Museum, where he was advanced six years ago to the position of head Curator of the Department of Anthropology.

Doctor Mason began his researches in the Smithsonian Institution in 1872, and two years later, in 1874, he was made collaborator in ethnology when he began arranging the anthropological collections of the Museum, which up to that time had not been classified. He also organized and promoted the Saturday lectures in the National Museum.

He was one of the founders of the Anthropological Society of Washington, having started the movement together with Mr. J. M. Toner and Mr. Garrick Mallery, in 1879. He was also a member of a large number of the leading Anthropological Societies in this country and abroad. In 1889, the French Minister of Instruction declared his studies to be of public utility. In 1890, he was appointed a member of the National Board of Geographic Names.

His literary style was especially noteworthy, for he was one of the few profound scientists who could write on a supposedly dry subject in a most fascinating manner. He not only made his writings readable, but intensely interesting. Since 1874 he has been a continuous contributor to archæological and ethnological literature, continuing his writings to the very end, the last completed paper from his pen being received from the printers on the day of his burial. His ability is the more marked because he was not able to do any field work and so was restricted to the description and comparison of museum collections.

He was associate editor of the American Naturalist for many years, but most of his publications have issued from the Smithsonian Institution and the National Museum. The following list of a few of his contributions to science will give an idea not only of the breadth of his work, but of the character of the man himself, for the very titles indicate a scientific author with strong human interests: *The Latimer Collection of Antiquities from Porto Rico* (1876); *Throwing-Sticks in the National Museum* (1884); *Cradles of the American Aborigines* (1887); *Aboriginal Skin-Dressing* (1889); *North American Bows, Arrows and Quivers* (1893); *Primitive Travel and Transportation* (1894); *Migration and Food Quest* (1894); *Aboriginal American Harpoons* (1900); *Aboriginal American Basketry* (1884 and 1902); and many contributions to the *Handbook of American Indians* (1907).

He was very much interested in young men and was always ready to assist and encourage them. Although very busy and not in the best of health during the latter years, he never lacked time to at least start any inquirer who came to him on the right track. He was a man of great will power, and I well remember his pointing out the stones in the floor of the National Museum where he "learned to walk." After his attack of hemiplegia in 1898 he used to practice walking along this line of stones without assistance until he could step from one stone to the next.

Although his time was largely spent on the work and customs of the past, he was a firm believer in the existence of all the past, boiled down, in the present. "Walk about the most refined home," he wrote,* "travel on the special train or in the sumptuous steamer and you will observe in each of these an epitome of human history." In another place he writes: "We are dealing now with the present as the revealer and living exponent of the past. It is like the 'House that Jack built'—all the story is in the last verse. If there be any lost arts, it is because they have been fused into later arts and could be assayed out if necessary. The history of the human species is one from first to last."

FREDERICK BENNETT WRIGHT.

Washington, D. C.

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*See RECORDS OF THE PAST, Volume II, 332-335. *The Past Is in the Present*, by Doctor Mason.

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SECOND COXE EXPEDITION TO NUBIA *

DOCTOR DAVID RANDALL-MacIVER has recently returned from an expedition to Nubia bearing a rich collection of archæological treasures. This is the second expedition to Nubia which has gone out under the University of Pennsylvania, the expenses for the undertaking being furnished by Mr. Eckley Brinton Coxe, Jr.

Last year Doctor MacIver discovered a cemetery at Shablul and unearthed many objects of interest unsuspected by archæologists. About 20 of the objects then uncovered bore strange inscriptions. The cemetery was a very small one, but the Director brought back with him to the Museum an almost priceless collection—the first of its kind. The results of last year's expedition have been on exhibition on the second floor of the University Museum since last fall. The University authorities intend to send out an expedition annually, a different site for operations to be selected each year. With this object in view, sites for excavating in the next two years have already been chosen.

This year Prof. M. C. Leonard Wolley, of the faculty of the University of Pennsylvania, was a member of the expedition and to his kindness we are indebted for the accompanying illustrations. Doctor MacIver was the director of the expedition which was exceptionally successful. They discovered a cemetery of about the same period and type as that of the year before, only about 20 times larger and very much richer. Like the Shablul place, it represents a civilization existing during the first 500 years of the Christian era, and of a type which archæologists did not expect to find. Practically everything discovered thus far indicates the inhabitants to have been Negroid in type, whose natural civilization must have closely resembled that of prehistoric Egypt, but throughout their history they had undoubtedly been subjected to the intimate influences of Egypt, whose forces penetrated the country probably as early as the XII dynasty. In later times the Hellenistic culture of the Ptolemies had also made itself felt on the upper Nile, there being records of alliances of these Greek Pharaohs with the kings of Nubia.

At the opening of the era Emperor Augustus had occasion to dispatch an armed force up the river Nile, and his Legate Petronius apparently burnt the fortress of Ibrim, which stands within sight of the Anibeh Cemetery. Of the country under the Candace Empire

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* This article is an abstract from the report appearing in the *Old Penn*, of October 10, 1908. Although this article is unsigned, the accuracy of the facts is vouched for by Prof. M. C. Leonard Wolley, of the University of Pennsylvania, who was one of the expedition.

little is known, except that it withstood Christianity until probably the VI century; at Anibeh no traces of Christianity whatever are found.

Anibeh, from which the second expedition has just returned, is in Nubia, south of Assouan, near the Nile valley; the river at this point is exceedingly narrow. The village nearest to the cemetery has but one street, and that is two and one-half miles long. Its inhabitants cultivated the small patches of arable soil along the Nile at this point, which are only 12 to 30 ft. broad.

The graves, or tombs, unearthed in this cemetery were of two sorts: the one consisting of a vault of mud bricks constructed at the bottom of a rectangular pit; in the other one a slope or shaft was cut about 5 or 6 ft. down into the hard mud deposit of the Nile; this shaft ended in a rude grave chamber, hewn out like a cavern, and closed at the entrance by a wall of bricks. Many of the graves of both kinds had also a superstructure of mud-brick, or of brick and stone, built after the interment had taken place. The shape of this superstructure was most peculiar; it took the form of a table of offerings. A solid square of masonry, flat or domed above, had on its east face two low projecting walls, roofed over, and forming a small false approach, within which were set vases and bowls of offerings to the dead. In front of this approach, on a brick altar, lay a stone table of offerings—a reproduction in miniature of the superstructure itself. On it was a funeral inscription in Meroitic, together with carvings of sacrificial vases and cakes. Somewhere above the tomb stood also a painted or inscribed tombstone, sometimes containing the portrait of the deceased, and a statue, half human and half bird, representing his soul. Within the tomb chamber the minimum amount of furniture was a pottery jar containing some form of drink, and a clay tumbler wherefrom to drink it. These simple objects might be multiplied at pleasure—as many as 30 were found in a single tomb. Added to them were often beads, bowls and jugs of bronze and clay; toilet cases, face powder, rings, scents, weapons and other possessions of the dead. Practically all of the tombs had been robbed in antiquity, and only such objects as enumerated above were left by these early vandals, they having taken with them all the jewelry and the more precious objects in gold and silver. In their efforts to get these, many of the bowls were thrown aside and broken. Of the collection of rings, all are metal intaglios, with the exception of one gem, and in one of the graves a piece of an Egyptian scarab was found.

Many of the bodies interred in the graves had disappeared, and in some cases only a few bones remained; in others the dryness of the soil had so well preserved the actual skin and hair of the dead that photographs of them might have passed for those of the living inhabitants of the country. Such bodies as merited scientific investigation have been preserved, and will be examined anatomically in due course of time.

STATUE FOUND OVER A GRAVE AT ANIBEH, NUBIA

Everything seems to establish the fact that the country was once occupied by a race of negroes capable of a most advanced and original state of civilization, and the objects recovered are a mine of information for archæologists and philologists. Most of the pottery is well formed and beautifully designed, while some of the decorations show a strong Egyptian, and sometimes Greek and Roman, influence; the designs have all been adapted to their own racial genius.

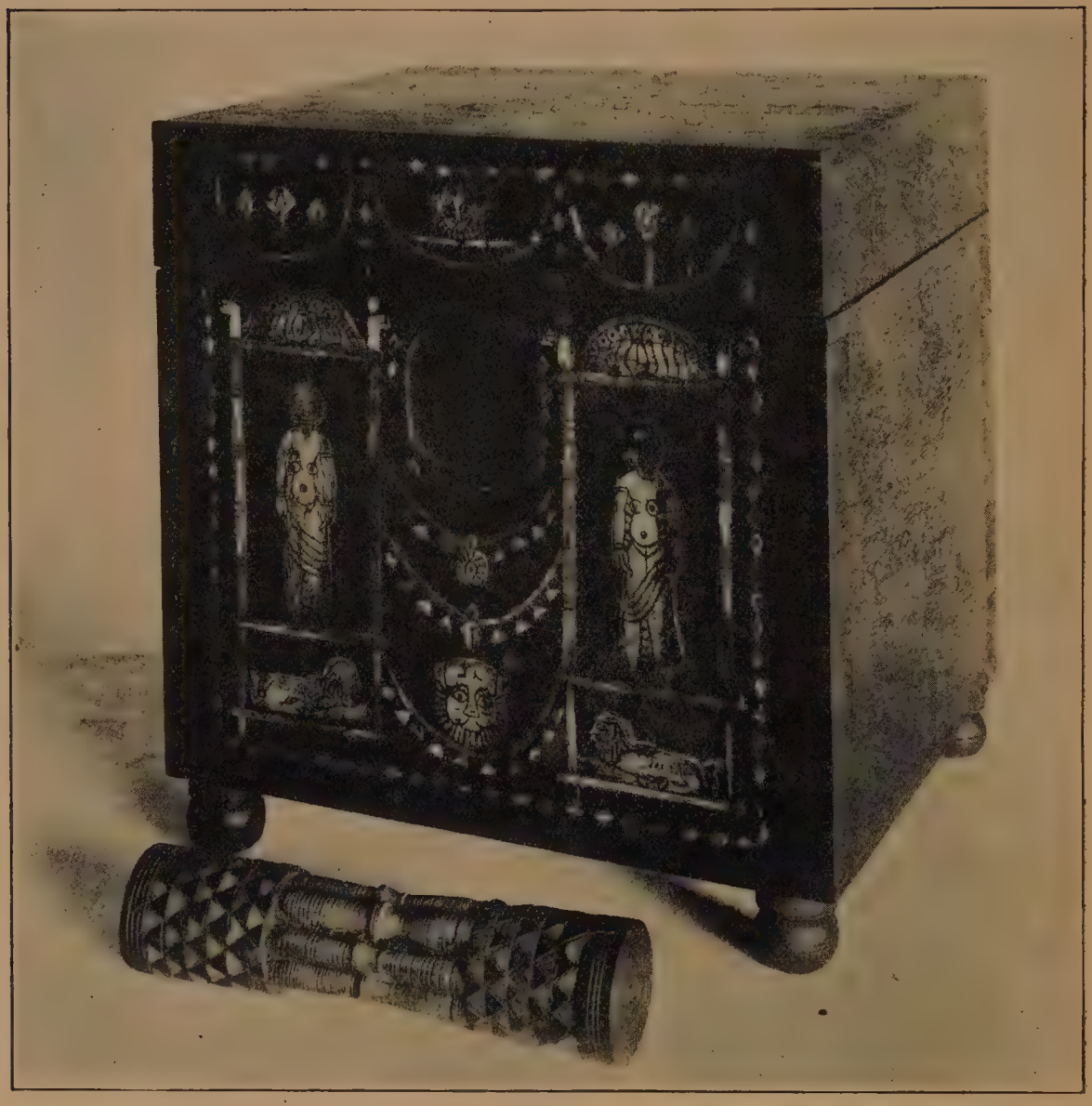
Among this year's collection are about 120 inscribed tablets. An effort will be made to tabulate the inscriptions on these, as well as the inscriptions on the objects found last year, with a view to deciphering this new tongue, now known as "Meroitic," in order that a more accurate knowledge of this interesting race of people may be had.

The objects found in many of the graves prove that the natives had intercourse with the then ruling nations of the world. From several graves a magnificent collection of Roman glass was taken. From one of the royal tombs some beautiful Hellenistic bronze pieces were recovered, including bowls, basins, spoons, ewers, a lamp, a punch ladle and a dish, similar to that used by the Greeks in worship; and two bronze bowls, one of which we reproduce. On this are depicted Nubian scenes. The one shows an Ethiopian queen sitting outside of her tent, beside some trees, while servants approach her with jars of milk, the fattening food which queens of Ethiopia are still obliged to take. Behind these figures is shown a man in the act of milking a cow. On the other bowl is a pastoral scene, showing a number of cows, and the milkman balancing his milk jug on his head.

Among the collection are about 150 small earthen cups or tumblers, besides which the government at Cairo kept 36. There were also about 300 other pottery pieces, including altars, wine jugs and water jars; 20 statuettes and 40 heads cut out of sandstone, and about 280 complete sets of glass beads; nearly 100 engraved finger rings, 4 complete wood and ivory boxes, and numerous other pieces of wood —plain, lathe-turned and inlaid; 2 groups of burial clothes, a painted terra-cotta bowl, numerous anklets, necklaces, bracelets, chains for the hair and waist, and about 50 small studs used for ear ornaments, besides many fragments of leather sandals, quivers, bronze and brass arrow points, a pair of shears, sticks for painting eyebrows, brass handles and a number of unclassified objects. The sandstone statuettes were probably attempts at portraiture, not one face resembling another, and on some attempts have been made to show cheek markings which are still characteristic of the Nubians. The principal characteristic of the statuettes is that they all represent the figures as being half bird and half human, and all of them have a small hole in the top of their heads, to which was attached a head piece, but only a few of these are still in place. On many of the statuettes traces of paint still remain. On the grave stele are various discrepancies in styles which cause wonder at the race that could produce them; some

BRONZE BOWL FROM ANIBEH, NUBIA, SHOWING AN ETHIOPIAN QUEEN

WATER JARS AND EARTHEN CUPS FROM ANIBEH, NUBIA



TOILET CASE AND PIGMENT POT FROM ANIBEH, NUBIA

are pure Egyptian, showing Anubis on one side and wings of Nut above, and an Egyptian figure on the other side. Another painting has the Nut wings above, and below a purely Nubian female figure, depicted with armlets, bracelets and necklaces, with the hair ornaments just as they were found on one of the dead bodies. The pottery decorations are particularly well done, and on several is the well-known Egyptian symbol of life, and the symbolic eye. Another design shows a frog, with the life symbol swinging from his mouth; other decorations are grotesque, and indicate that the people were probably devil worshipers. The camelopard, seldom seen in primitive art, is a favorite subject; so also is the crocodile, giraffe, guinea fowl, antelope, asp, etc.

The glass beads which were found were undoubtedly of their own manufacture, and are remarkable in that they show a kind of Mosaic

or glass inlay in glass, which inlay must have been fused. The designs are numerous and rather striking. Another peculiarity is the gilding of some of the beads. Among the best preserved objects are some beautiful pieces of tooled leather, in intricate patterns, and caskets inlaid with ivory.

The objects thus far uncovered prove these unknown peoples to have been clever workmen, using excellent tools, and showing that their wearing apparel was rather artistic, consisting of a tunic and wide robe, etc., principally made of linen. They wore sandals, and ornamented themselves with iron and bronze anklets and bracelets, chains, rings, etc. The metal of which many of the objects are made has not yet been analyzed, but it is believed to consist of compositions of iron, bronze, lead and tin.

BOOK REVIEWS

A CANYON VOYAGE [1]

WITH our present railroads, hotels, and maps it is well for us to look back, in some cases only a few years, to see how the first steps were taken to bring about these results. Before 1869 the larger part of the Colorado river was unknown, except at isolated points where trails crossed. In this year Major Powell descended the Green-Colorado river from the Union Pacific Railroad in Wyoming to the mouth of the Virgin river in Nevada. This, however, was a short trip of 3 months and merely a reconnoissance.

In 1871 an extended expedition was planned under the leadership of Major Powell, and it is the story of this second trip which Frederick S. Dellenbaugh, a member of the expedition, has presented in *A Canyon Voyage*. Outside of prosaic government reports, no detailed account of this wonderful expedition through the most marvelous canyon of the world had been published. The account is popular and gives the daily life and experiences of the party which is interwoven with their scientific discoveries. The book is a valuable addition to our literature of geographical exploration and discovery. It is accompanied by a number of maps and beautiful colored reproductions, as well as numerous other illustrations.

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[1] *A Canyon Voyage:* The Narrative of the Second Powell Expedition down the Green-Colorado river from Wyoming, and the Explorations on Land, in the Years 1871 and 1872, by Frederick S. Dellenbaugh, Artist and Assistant Topographer of the Expedition. Pp. xx, 277, 50 illustrations, 5 maps. $3.50 net. G. P. Putnam's Sons, New York and London, 1908.

OUT-OF-DOORS IN THE HOLY LAND[2]

Although Henry van Dyke's book, *Out-of-Doors in the Holy Land,* is not a work on archæology, yet no volume on the "Holy Land" could be written without having a great deal of history and archæology interwoven, for so much of history has been enacted in this little plot of land that every turn reveals some point of historic interest. "Fierce and mighty nations, hundreds of human tribes, have tramped through that coveted corner of the earth, contending for its possession: and the fury of their fighting has swept the fields as with fire. Temples and palaces have vanished like tents from the hillside. The ploughshare of havoc has been driven through the gardens of luxury. Cities have risen and crumbled upon the ruins of older cities. Crust after crust of pious legend has formed over the deep valleys; and tradition has set up its altars 'upon every high hill and under every green tree.' The rival claims of sacred places are fiercely disputed by churchmen and scholars. It is a poor prophet that has but one birthplace and one tomb."

For a charming glimpse of Palestine from a different point of view than we are accustomed to, this book cannot be too highly recommended. The illustrations in color add to the general attractiveness.

THE MYSTERY OF THE PINCKNEY DRAUGHT[3]

In this volume, Mr. Nott sets forth the history, so far as known directly and by inference, of the Pinckney Draught of the Constitution of the United States and thereby seeks to vindicate Charles Pinckney, of South Carolina, and to give him due recognition for what he did for the Constitution. He carefully weighs the evidence for and against its genuineness, concluding that "The Pinckney Draught in the Department of State is * * * all that Pinckney represented it to be," when, in 1818, he deposited it in the Department at the request of the Secretary of State for "a copy of the Draught." The titles of a few of the chapters will give some idea of the scope of the book: The Committee's Use of the Draught, What Became of the Draught, What Pinckney Did for the Constitution, Of Pinckney Personally. The value of this contribution to the Constitutional history of the United States is increased by the appearance in the Appendix of the Pinckney Draught and of the Draught presented to the Constitutional Convention by the Committee of Detail.

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[2]*Out-of-Doors in the Holy Land:* Impressions of Travel in Body and Spirit, by Henry van Dyke. Illustrated. Pp. xvi, 325. $1.50 net. Charles Scribner's Sons, New York, 1908.

[3]*The Mystery of the Pickney Draught,* by Charles C. Nott, formerly Chief Justice of the United States Court of Claims. Pp. 334. $2.00 net. The Century Company, New York, 1908.

EDITORIAL NOTES

EXCAVATIONS NEAR FORTRESS OF OLDENBURG.—Excavations near the former fortress of Oldenburg, near Schleswig, have resulted in the discovery of a large grave of the Viking period, containing the iron bolts and nails of a boat and two Runic stones.

ROMANO-BRITISH BURIAL PLACE IN WELWYN.—In trenching the hillside at The Grange, Welwyn, England, about a dozen urns were dug up and also various small earthenware vessels and bottles, some of them of Samian ware.

WORK TO BE CARRIED ON AT PYLOS.—It is reported that the German Emperor has given Professor Dörpfeld, director of the German Archæological Institute in Athens, $1,250 to use in starting excavations on the site of Pylos, which Doctor Dörpfeld places at some distance from the modern Pylos.

NATIONAL MONUMENTS.—In pursuance of the Act of June 8, 1906, for the Preservation of American Antiquities, President Roosevelt has established as national monuments the prehistoric ruins of Chaco Canyon, and the Gila Cliff-dwellings in New Mexico; Montezuma Castle, and the ruins of cliff-dwellings at Tonto, Ariz.

TOMB OF ASQUILLA POLLA.—In September the tomb of Asquilla Polla was discovered at Pompeii. An inscription on the tomb says she died at the age of 22, and that her husband was a magistrate. A skeleton, 50 Republican and Imperial bronze coins, some silver objects and a bunch of keys were found inside.

BRITISH SCHOOL AT ATHENS.—At the annual meeting on October 27, an account of the year's work by Messrs. Wace and Droop in Thessaly was given. Scanty Greek remains were found in the prehistoric tumulus at Zerelia, the ancient Greek Itonos. Neolithic deposits, however, dating back 3,000 years before Christ show that the Neolithic culture lasted in northern Greece for a considerable time after the Bronze Age had begun in the Ægean area. Bronze seems to have been used at a later date for only a short time before the use of iron was introduced.

ROMAN ROAD IN HEREFORDSHIRE.—At Abbeydore, Herefordshire, England, a Roman road showing wheeltracks has been uncovered recently. The gauge was 4 ft. 6 in. The tracks are at one side, leaving a walking way 5 ft. wide. Some Roman nails, fragments of a horseshoe and a heavy linch pin were lying on the pavement.

ROMAN VASE FROM BROUGH, ENGLAND.—Among the recent additions to the Hull Museum, England, is a Roman vase of "Pinched" ware found at Brough. It is of "reddish-brown clay, with a hexagonal body decorated with 6 large oval depressions. It is 5 in. high, 3 in. in diameter at the widest part, and 1⅞ in. in diameter at the mouth. It stands on a small circular base 1⅛ in. in diameter."

INVESTIGATION OF INDIAN VILLAGE SITES IN NORTH DAKOTA.—The State Historical Society of North Dakota has been investigating the Indian village sites on the Missouri river in that state, looking for evidences of occupation by the Mandans, Cheyennes, Grosventres, and Arikara. Mr. A. B. Stout, of Madison, had charge of the field work during the past summer.

NEW MONUMENTS AT POMPEII.—Excavations at Pompeii have brought to light two sepulchral monuments, one to the Edile Vestorius Priscus, which is decorated with frescoes, and the other to a woman named Septima. The woman's monument has an inscribed marble tablet and a semi-circular seat raised around a column supporting a sun dial—a reproduction of a mosaic picture (so-called) of philosophers recently discovered near the same spot.

ANOTHER PALÆOLITH FROM BUNGAY, ENGLAND.—In June of this year Mr. W. O. Dutt obtained a second palæolithic implement from the gravel pit on Bungay Common, thus confirming his previous find (See RECORDS OF THE PAST for May-June, 1908, p. 148). It is made of an artificial detached outer flake of flint and is oval in shape instead of pointed as the earlier specimen was. Neither of these resembles the larger palæoliths from Hoxne in the same valley.

EXCAVATIONS AT CAERWENT, MONMOUTHSHIRE, DURING 1907-1908.—During the later part of 1907 the basilica and forum on the site of the Romano-British city of Venta Silurum at Caerwent were explored. The plan of the whole block was recovered. This, surrounded by streets on all sides, formed one of the 20 *insulae* into which the town was divided. "An interesting feature is the large drain which carried the surface water off the open area under the basilica and away to the north. The season of 1908 was devoted to the continuation of the work in the *insula*, to the east of the forum, to the south of a large house, numbered VII^{N}, excavated in 1906. Remains of several private houses and some rubbish pits were found, one containing a peculiarly hideous seated statuette of a female deity."

ROMAN COINS AT CORBRIDGE.—On September 18, a number of Roman gold coins were found in the excavations at Corbridge, the Roman Corstopitum. They had been wrapped in lead foil and placed in a hole in the wall. They were from the reigns of Valentinian I, Valens, Gratian, Valentinian II, Theodosius and Maximus. The largest number were from the mints at Trier, two were from Rome and three from Constantinople.

FACSIMILE OF THE CODEX SINAITICUS.—A photographic facsimile of the New Testament portions of the Codex Sinaiticus is to be issued in 1909 by the Oxford University Press. This manuscript, found in 1844 by Tischendorf in the monastery of St. Catherine on Mt. Sinai and now in the Imperial Library at St. Petersburg, was issued by Tischendorf in transcript with type cut to imitate the manuscript. Now Professor and Mrs. Kirsopp Lake, of Leyden, have taken full sized negatives which will be published by the collotype process.

FINDS AT AMARAVATI, INDIA.—The English Archæological Survey Department reports interesting discoveries at Amaravati, India. A gold casket with a lid containing gold flowers and small pieces of bone was unearthed. "Bronze images were also found representing Buddha addressing his disciples and slabs having Asoka characters. Other finds are recorded at Sankaram with coins of the VII century bearing the effigy of King Vishnuvardhana were unearthed; and at Preambair, where Cromlechs containing long earthenware coffins and articles of household use, such as 3-legged jars, were discovered."

DISCOVERIES AT ABYDOS.—Doctor Garstang, of the Liverpool Institute of Archæology, has made some interesting discoveries at Abydos. There are some fine specimens of early dynastic and prehistoric pottery and miniature ivory carvings, one of a small sphinx holding a captive in its claws. This appears to be the earliest representation of a sphinx and seems to indicate that this monster was originally Asiatic in conception. More important, however, was the discovery of a tomb of the Hyksos period, the first ever found. It contained pottery, non-Egyptian in character. It is black, well glazed and thin, resembling ware found in Syria and Asia Minor. This discovery points to a Hittite origin for the Hyksos.

ROMAN SARCOPHAGUS FOUND IN THE VICOLO MALABARBA.—Outside the Porta S. Lorenzo, in the Vicolo Malabarba, a Roman sacrophagus has recently been brought to light. It is 5 ft. 7 in. long by 1 ft. 6 in. wide, while the cover is 5 ft. 8 in. by 2 ft. 4 in. The front and one side were covered by scenes, in relief, of a Roman victory probably over Parthians or Dacians. A Roman

soldier is represented forcing a captive to bow and do obeisance to a youthful figure, either a Roman emperor or general. There is also a barbarian in chains with his wife and child; bearded barbarians; and a figure of Pegasus, which Prof. Dante Vaglieri believes was the standard of the legion to which the dead man belonged. A skeleton, a glass vase, and a silver denarius coined under Titus, were found in the sarcophagus.

RECENT EXCAVATIONS AT ROMAN CHESTER, ENGLAND.—"During the demolition of some property, a section of the Roman wall was discovered. This is by far the most perfect portion yet found in Chester. The total length of the wall as at present recovered is 56 ft. 10 in. It is built of ashlar, consisting of 7 courses of masonry laid in very regular and for the most part closely jointed courses. The ashlar work is backed by rubble work, coursed more or less to correspond with the masonry. Large quantities of soil were used to fill in the cavities between the masonry and the rubble work. The foundations were deep and were built of rubble similar to the inner lining of the wall. Behind the rubble facing of the wall was found a solid bank of stiff clayey loam, which was probably at one time supported by masonry or stonework. The fosse was not of the usual V shape, the bottom being broad and flat."

STROUD ROMAN VILLA, PETERSFIELD, ENGLAND.—A mile west of Petersfield, Hants., England, lie the foundations of a large Romano-British villa of the courtyard type of the Constantine period, which Mr. A. Moray Williams began excavating in 1907. Eight years ago, a lead coffin and skeleton were found in the adjoining field. Bricks and the local green sandstone were the building materials used. There must have been several periods of occupation. Some rooms were paved with square tiles, some with red brick *tesserae,* and one passage with mosaic whose pattern, however, could not be made out. One interesting room had contained a hypocaust, but the flue-passage had been blocked up and the box-tiles used to reface the walls. There are two baths, and possibly a third. More than 20 bronze coins, ranging in date from 270 to 350 A. D., were among the finds; also an iron doorkey, and some instruments found at the bottom of one of the baths, pottery of the usual types, glass fragments, animal bones and oyster shells were also included in the discoveries.

MAUMBURY RINGS.—During September of this year, Mr. St. George Gray directed excavations at Maumburg Rings, near Dorchester, England. The "arena" attracted most attention. Its surface at present, after the silting up of many centuries, is a slight concave with a rise of 5 ft. from the center to the entrance on the side toward the town. A trench revealed the fact that the original floor of solid chalk was level—2 ft. below the present surface in the center and 7 ft. below at the edge. The chalk floor seemed to have been strewn

with fine shingle, either to fill up irregularities, or to prevent slipperiness. Across the entrance, there was a series of 3 or 4 deep socket holes cut down into the solid chalk, as if to receive the supports of a barrier. Near by was a pile of large stone slabs. A coin of Claudius I was found in the primary trench, and also a Carausius and a rare Constantine.

This is believed to have been a Roman arena. Excavations laying bare the northern part of the eastern bank revealed what appeared to be the solid chalk wall of the arena. This has been considered as an amphitheater, but there were no indications of tiers of seats. Near a cutting on the northwestern portion was found an area where the chalk was not solid. On digging into this, the explorers found a bronze fibula, a small iron spearhead, Roman pottery, as well as red-deer antler, flint chippings, cores, flakes, hammer-stones, and burnt flints.

PARIS SCHOOL OF ANTHROPOLOGY.—The Paris School of Anthropology opened on November 3 for its thirty-third year with a corps of 8 professors, 3 associate professors and 4 lecturers. Courses will be offered as follows:

L. Capitan, professor.—Prehistoric Anthropology.

G. Hervé, professor.—Ethnology.

P. G. Mahoudeau, professor.—The Genealogy of Man; Anthropoids; Hominians.

L. Manouvrier, professor.—Physiological Anthropology.

A. de Mortillet, professor.—A Comparative Study of Primitive Industry, both Ancient and Modern.

G. Papillault, professor.—Sociology.

F. Schrader, professor.—Anthropological Geography.

S. Zaborowski, professor.—Ethnography (Italy, The Balkans, Greece).

R. Dussaud, assoc. professor.—The Ancient Peoples of Asia Minor.

J. Huguet, assoc. professor.—General Ethnology (The Berbers).

E. Rabaud, assoc. professor.—Embryogeny and Anatomy.

R. Verneau, lecturer.—Fossil Man in Europe and America.

R. Anthony, lecturer.—Vestigial Structures in Man.

H. Pieron, lecturer.—Psychometry and Ethnic Psychology.

A. Marie, lecturer.—Physical and Mental Degeneracy.

METHOD OF VENTILATING CEREMONIAL ROOMS IN THE CLIFF-DWELLINGS.—In his excavations of the Spruce-tree House in the Mesa Verde National Park, Mr. J. Walter Fewkes has paid special attention to certain chimney-like passages leading from the kivas or ceremonial rooms to the open air. There are 8 circular kivas under ground in the Spruce-tree House. Each has a low inner wall, which has a rectangular opening, capped by one or more flat stones. At the beginning the cavity is large enough to admit a man's

body, but it narrows as it recedes from the room into a passage which soon turns upward. Four theories as to the use of these have been brought forward—that they were chimneys, that they were entrances, that they had some ceremonial use, and that they were ventilators. The first is easily disposed of, as no signs of smoke appear; the second, also, is eliminated by the fact that the passage is not large enough for even a child. There are in some cases other tunnels which evidently were passages from one room to another. The third theory is too vague to need attention. The facts all point, Doctor Fewkes believes, to the ventilator theory. The inhabitants were forced to find some method of ventilation, as otherwise the smoke would have driven them out, hence these air shafts which introduced the air at the level of the floor where it struck a deflector and was distributed to all parts of the room.

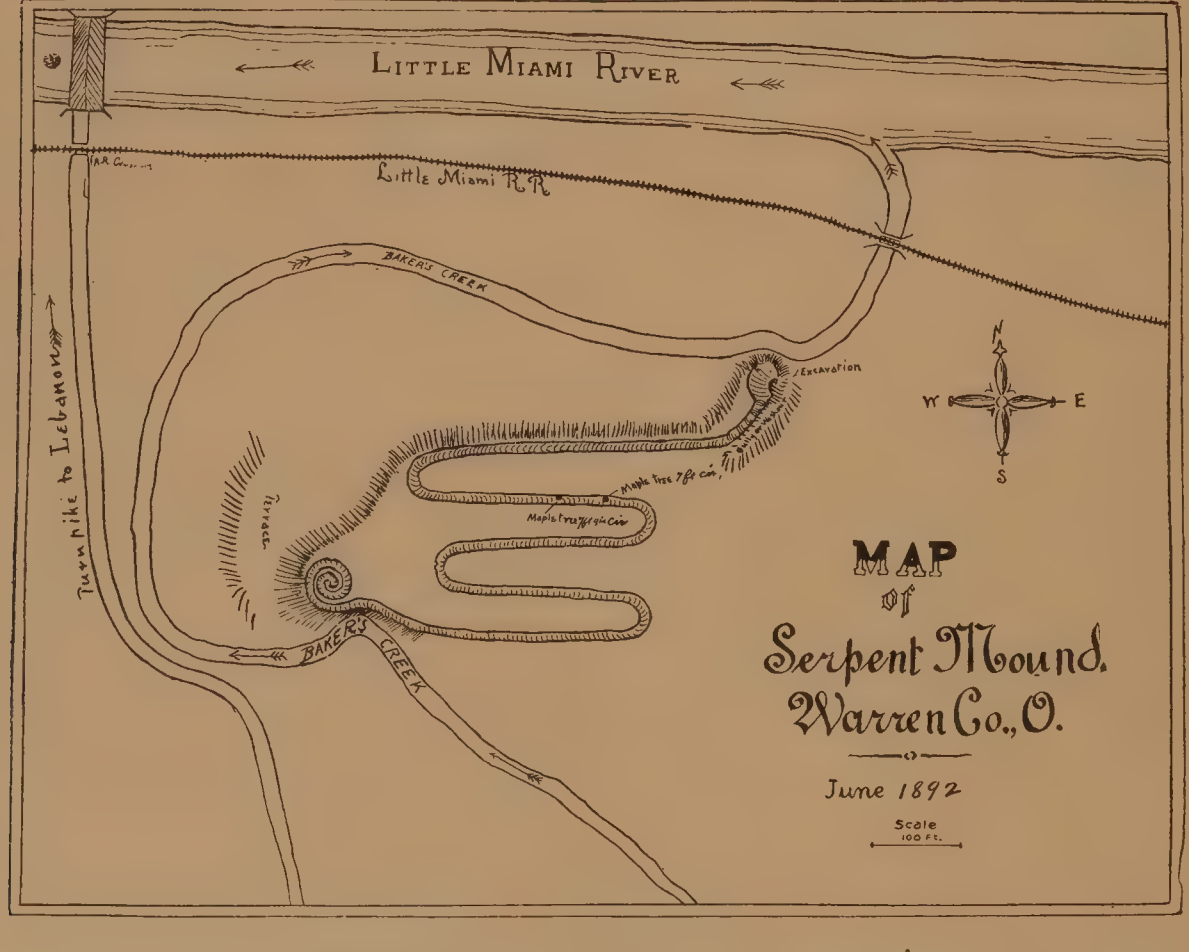
WORK IN ASIA MINOR BY PROFESSOR GARSTANG.—Professor Garstang, of Liverpool University, returned to England in October from Asia Minor. During the autumn he had been excavating at the village of Saktjegözy, north of Aleppo, about 30 miles west of Aintab. There he discovered a temple surmounted by a wall 6½ ft. thick, "the main gate of which is decorated with lions and composite figures consisting of winged human-headed quadrupeds with tails terminating in birds' heads. He also found several bas-reliefs showing the king in procession accompanied by his falconer and other officials, and a winged disk in the center of which is, not the solar emblem, but a crescent moon and six-pointed star. There were also a circular altar resting upon two man-headed sphinxes and other bas-reliefs showing the king or a god seated at table with a worshiper or subject, and an eagle-headed deity performing the ceremony which is generally interpreted as the fertilization of the date-palm." The designs show traces of Assyrian influence, and it may be that the deities represented are really Assyrian. The treatment, however, is different from that of any known Assyrian sculpture, therefore it is possible that most of them were the work of Hittite artists about the VIII century B. C. No inscriptions were found. "'Sondages' made within the temple walls produced a great mass of broken pottery, extending to a depth of some 30 meters with a neolithic floor at bottom. Among these fragments were some of the Cretan ware known as Minoan, and of what Dr. Arthur Evans has named the 'Palace style.'" It is hoped that the work may be continued next year.

DISCOVERIES AT EWE CLOSE, WESTMORLAND FELLS, ENGLAND.—Mr. W. G. Collingwood has carried on investigations recently at Ewe Close, Westmorland Fells, above Dale Bank, Crosby Ravensworth. The remains, a series of buildings, cover a much larger space than had been supposed. The pottery is chiefly Romano-British, though some is Roman, suggesting that the site was

occupied at the end of the Roman period and later. The village seems not to have been fortified, though the walls are thick and built of solid masonry. The walls inside are as thick as the outside ones. There were traces of lanes of hut circles, like village streets; also of some oblong buildings which are now reduced to heaps of earth turfed over, but which were once stone-built all around. Smaller square enclosures, thought at first to be cattle-pens, later appeared to be some kind of dwelling. The hut circles are well paved with natural rock, with limestone bits or with inch-thick flags of red sandstone. "They contain fireplaces and little cupboards, as well as places which seem to have been beds. There were bones in some and querns for grinding corn, pottery of various kinds, and occasionally scraps of metal, including a bronze button. There were no finds of treasure, such as are sometimes obtained in digging up grave cairns. The most interesting find was in the row of sloping enclosures at the north side, which may have been gardens or cattle-pens, but cannot have been houses." In a corner of one was found the skeleton of a girl buried with great care in a grave formed of large stones, floored and covered above with equally large stones. "The place, however, is not a cist, but the grave of a girl lying out at full length, who must have been under 4 ft. 11 in. high. At the side of her head was a little red pot, and on her breast were some extremely small bones, claws, and teeth, probably those of a squirrel."

ANNUAL MEETING OF THE ARCHÆOLOGICAL INSTITUTE OF AMERICA.—The Archæological Institute of America will hold a general meeting in Toronto, December 28-30, in connection with a meeting of the American Philological Association. Among the papers to be read are the following: *The Temple of Soleb, a new Form of Egyptian Arch,* James Henry Breasted, of Chicago University; *The Development of Babylonian Picture Writing,* George A. Barton, of Bryn Mawr; *Excavations and Repairs of Casa Grande,* J. Walter Fewkes, of the Bureau of Ethnology; *Excavations of* 1908 *in the Roman Forum and near the Arch of Titus,* Harry L. Wilson, of Johns Hopkins University; *The Date and Place of Writing the Biblical Manuscripts in the Freer Collection,* Henry A. Sanders, of the University of Michigan; *Visits to the West Shore of the Dead Sea, and the Arabah,* President Francis Brown, of Union Theological Seminary; *A Type of Roman Lamp,* Dressel's Forma 25, Samuel E. Bassett, of the University of Vermont; *Robbia Notes,* Allan Marquand, of Princeton University; *A Little Homeric Problem,* William T. Harris, of Harvard; *A Heracles Head from Sparta,* William N. Bates, of the University of Pennsylvania; *Death of Romulus,* Director Jesse B. Carter, of the American School of Classical Studies in Rome (to be read by Dean A. F. West); *Excavations of Tyuonyi,* New Mexico, Edgar L. Hewett, Director of American Archæology of the Archæological Institute of America; *Group Dedicated to Daochos at Delphi,*

Kendall K. Smith, of Harvard; *Restoration of the Stoa in the Asclepieum at Athens,* Gordon Allen and Lacey D. Caskey, recent members of the American School of Classical Studies at Athens; *Group of Sculptures from Corinth,* Miss Elizabeth M. Gardner, of Wellesley; *Old Jewish Picture of the Sacrifice of Isaac,* Charles C. Torrey, of Yale; *Coptic Biblical Manuscript in the Freer Collection,* W. H. Worrell, of the University of Michigan; *Two Etruscan Mirrors,* John C. Rolfe, of the University of Pennsylvania; *Antiquities from Boscoreale in the Field Museum,* Herbert Fletcher De Cou, late of the American School of Classical Studies at Rome; *So-called Flavian Rostra,* Esther B. Van Deman, Carnegie fellow in the American School of Classical Studies in Rome.



WARREN COUNTY SERPENT MOUND, FROM DOCTOR METZ'S ORIGINAL MAP

Courtesy of Ohio State Archæological and Historical Society

FURTHER NOTES ON THE SERPENT MOUND IN OHIO.—Since publishing the article on *A New Serpent Mound in Ohio and Its Significance,* in the last issue, we have been fortunate in securing a reproduction of the detailed map of this mound, made by Dr. Metz in 1892, which through the kindness of the Ohio Archæological and Historical Society we herewith reproduce. This is intended to replace

the rough sketch map on page 223 of this volume, which, although it illustrates the main features, is not of sufficient detail or accuracy.

We would further call your attention to another serpent mound on this continent which should have been mentioned in the article referred to above. In Otonabee Township, Peterborough County, Ontario, Canada, there is a serpent mound which was figured in volume V of RECORDS OF THE PAST on page 128. This mound, like the ones in Ohio, occupies a commanding position. It extends for about 200 ft. in a general east and west direction, 70 to 80 ft. above the waters of Rice Lake. For full description and illustration see *Annual Archaeological Report for* 1896-'97. Appendix to Report of Minister of Education of Ontario, pp. 14-26. We might also refer to the serpent designs which appear on a number of the Babylonian Boundary stones as depicted in Doctor Clay's article on *Babylonian Boundary Stones,* pages 41 to 46 of the current volume.

DOCTOR STEIN IN CENTRAL ASIA.—Doctor Stein continued his archæological labors in Central Asia throughout the winter of 1907-08. An extensive collection of ruined Buddhist shrines, known as *Ming-oi* (the thousand houses), situated on some low rock terraces overlooking the Karashahr river not far from the Korla oasis, was excavated. The ruins are in long rows of detached cellas, of various sizes, but of similar plan. The temples had evidently been damaged by fire, probably at the time of the earliest Mohammedan invasions. Nevertheless, excellent relievo sculptures in stucco were recovered from the interior of the larger shrines; from the passages enclosing some of the cellas, the excavators dug up fine fresco panels, saved from burning by burial. There were also painted panels and delicately carved relievos in wood, with traces of gilding on them. The influence of Græco-Buddhist art from the northwestern part of India was apparent. The manuscripts found were either in Indian script or Uighur. No building which could be identified as a monastery was found. Many cinerary urns and boxes were unearthed.

After Christmas, the party moved to the hills of Khora, where there are Buddhist ruins. There is a series of small temples and monastic dwellings situated on rugged cliffs overlooking the Karashahr river, in a position resembling that of many of the Buddhist sanctuaries in Indo-Afghan. Some fine wood carvings were discovered here.

March and the early part of April were spent in archæological work along the desert belt adjoining the oasis from Domoko to Khotan. Among the new ruins traced there, were the remains of a large Buddhist temple, decorated with elaborated frescoes, belonging to the early centuries of the Christian era.

On the curious desert hill of Mazar-tagh, flanking the Khotan river, a fortified watch station which formerly guarded the river route was discovered. The fort had been destroyed by fire, but masses of

refuse had remained in excellent condition on the steep rock slope below. A large number of documents on wood and paper in a variety of scripts, mostly Indian, Chinese and Tibetan, all earlier than the IX century A. D., were recovered. Most of them probably belong to the period of Tibetan invasions and resemble the records found by Doctor Stein during the previous year at Miran, south of Lop-nor.

SCULPTURED STONES OF NORWAY.—At the meeting of the British Association, at Dublin, last September, Dr. Haakon Schetelig presented a paper on *The Sculptured Stones of Norway and Their Relation to Some British Monuments.* He stated that although the sculptured stones of the Viking age in Norway are not very numerous, yet they are of great interest and show several different types. On the "standing stone of Kirkeide, in Nordfjord" there are many symbols, including the combe, the serpent, the group of four concentric circles, the crescent, and the radiated sun disc, all of which are found on the early Christian monuments of Scotland, thus proving, he claims, direct communication between Scotland and Western Norway about 700 A. D. Further evidence of such connection has been suggested by Prof. Sophus Bugge, who noted common peculiarities in the form of the runes. Mr. Jacobson from a comparison of the names of places in Norway and in Shetland has reached a similar conclusion.

PREHISTORIC ARCHÆOLOGY IN JAPAN.—During the past quarter of a century the observations of Japanese and foreign investigators have enabled some general conclusions to be made. Features not shared by other cultures have been isolated, while the resemblance of culture vestiges to those of other lands agrees with the general verdict of prehistoric intercommunication. Here also the great number of crude stone implements and the persistence of horn and bone harpoons of palæolithic form suggest a direct survival from the earlier culture, while some indications of an evolution are present. No remains of undeniably palæolithic status have been found. * * *

The discovery of Ainu remains in the shell heaps and underlying soil proves that this people played a part in the neolithic culture. [N. Gordon Munro in *Man.*]

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